Mergers & Acquisitions

Workbook

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The ICFAI University

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Preface

The Institute of Chartered Financial Analysts of India has been upgrading the study material so that it is amenable for self-study by the Distance Learning Students.

We are delighted to publish a Workbook for the benefit of the students preparing for the examinations. The workbook is divided into six parts.

Brief Summaries of Chapters

Brief summaries of all the chapters in the textbook are given here for easy recollection of the topics studied.

Part I: Multiple-Choice Questions and Answers (with Explanatory Notes)

Students are advised to go through the relevant textbook carefully and understand the subject thoroughly before attempting Part I. Under no circumstances the students should attempt Part I without fully grasping the material included in the textbook.

Frequently Used Formulae

Similarly, the formulae used in the various topics have been given here for easy recollection while working out the problems.

Part II: Problems and Solutions

The students should attempt Part II only after carefully going through all the solved illustrations in the textbook. A few repetitive problems are provided for the students to have sufficient practice.

Part III: Applied Theory Questions and Answers

All theory questions are applied in nature. Having understood the basics in the textbook, the students are expected to apply their knowledge to certain real life situations and develop relevant answers. To be able to answer the applied theory questions satisfactorily, all the students are advised to follow regularly the Analyst magazine, business magazines and financial dailies.

Part IV: Case Studies Problems and Solutions

A case study attempts to test the cognitive skills of the student in integrating various concepts covered in the subject with focus on quantitative aspects. Hence, students should attempt them only after they are thorough with the entire subject.

Part V: Caselets Questions and Answers

A caselet also tests the cognitive skills of the student in integrating various concepts but with focus on qualitative aspects. Students are advised to try to answer the questions given at the end of the articles in the ICFAI Reader to develop their skills further. The caselets given in this part also help students gain the adequate exposure on how current events of interest can be analyzed and interpreted.

Part VI: Model Question Papers (with Suggested Answers)

The students should attempt all model question papers under simulated examination conditions. They should self-score their answers by comparing them with the model answers.

Please remember that the ICFAI examinations are quite rigorous and demanding. The student has to prepare well for each examination. There are no short-cuts to success. We hope that the students will find this workbook useful in preparing for the ICFAI examinations.

Work Hard. Work Smart. Work Regularly. You have a good chance to succeed. All the best.

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Brief Summaries of Chapters

Overview

- In the pursuit of growth, business firms engage themselves in a wide range of activities like expansion, shrinkage, restructuring of assets and ownership structures. Expansion can be carried out by way of Mergers and Acquisitions, Tender Offers and Joint Ventures. The merger activity itself has broadened and has included additional activities of corporate restructuring and control. The usage of tender offers and joint ventures have also increased along with the increased usage of merger activities. The recent years have also seen the usage of divestitures under merger activities. Other major changes taking place in the ownership structure in recent years include: usage of exchange offers and share repurchases altering the ownership shares in firms; greater use of leverage and increased use of lower-rated bonds; public corporations moving back to private ownerships representing management buyouts and leveraged buyouts, etc. Companies being agitated by control issues are taking antitakeover measures in an attempt to discourage takeovers.
- It can be noted that all the major movements coincided with sustained growth of the economy and significant changes in the business environments. Moreover, the recent trends have represented activities of much broader scope than those of the previous merger movements.

Merger Types and Characteristics

- Mergers could be of three types: horizontal, vertical and conglomerate. Horizontal mergers are associated with providing economies of scale. Vertical mergers achieve cost efficiencies by internalizing transactions. Financial conglomerates improve the resource allocation in combined firms whereas, the managerial and concentric conglomerates show potentials for synergy and transfer of managerial capabilities.
- Capability transference also explains the horizontal and related industry mergers. As per this theory, a firm is taken as a combination of organization capital and investment opportunities. Team effects give rise to organization capital. Organizational learning refers to the improvement in the capabilities of managers and other employees through experience. It can be segregated as generic management capabilities, industry-specific management capabilities and firm-specific capabilities.
- An industry life cycle model indicates that merger strategies are to be in tune with the stage in which the industry is currently in. There being no entry barriers or competitive advantages to be capitalized upon when the industry is in the introductory or growth stage, firms operating in this phase of life cycle are seldom subjected to mergers. At the maturity stage, growth slows, making firms an attractive target for horizontal mergers. Towards the declining stage, firms try to capture lower costs and strengthen profit margins, and hence go for vertical integration. Further, when firms diversify away from the declining industry and venture into new areas unrelated to their own, the conglomerate merger takes form.

Principles of Valuation

- M&As, restructuring and corporate control in their proper perspective, are all forms of capital budgeting activities. The capital budgeting criteria is taken in relation to investment in fixed assets, investments in cash, receivables, and inventories and also in M&As and other restructuring activities. Investment decisions and their evaluation by capital budgeting analysis are important for a firm as the consequences of the decision continue for a number of years. Besides, the asset expansion requires substantial outlays, which must be arranged in advance.
- The major methods for evaluating projects are the Net Present Value (NPV) and the Internal Rate of Return (IRR). Cash flows and the cost of capital form the critical variables for calculating the NPV and IRR. Net income when added with after-tax interests and deducting the investments gives the free cash flows.
- The free cash flow basis for valuation has four models: cash flows with no growth, cash flows with constant growth, supernormal growth followed by no growth and supernormal growth followed by constant growth.

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- Dividends can also be treated as cash flows. Accordingly, here again we have four basic models: no growth in dividends, constant growth in dividends, temporary supernormal growth then no growth, temporary supernormal growth then constant growth.
- Besides the cash flow approach, there are other models for valuing a firm. Miller-Modigliani model, Stern's approach and Rappaport approach are a few to name. Studies carried out by various researchers proved that the Miller-Modigliani model is better than the others. The model implemented the logic of its formulations. The resulting formulations are to the advantage of the users as there is a relatively simple basis for the derivation from the capital budgeting models. Further, the resulting valuation models are easier to use.

Increasing the Value of the Organization

- The value of a firm is sensitive to the changes in the key input variables/parameters. The sensitivity could either be positive or negative. The negative implications indicate that even a slight change in the key input affects the value widely. Thus, valuing a firm is more of art than an objective procedure and requires judgment by the valuer. On the positive side, the management can determine the key input variables required to produce the desired results based on the valuation models. The valuer takes the current market price of the common stock of the company into consideration. After determining the combination of the input variables that would be consistent with the observed market price of the stock, the management can question itself as to the achievability of the input variables. In case, it is analyzed that the achievability is not plausible to support the current market price, it can be concluded that the price is overvalued.
- The key valuation parameters provide with the instruments for strategic planning by the firm. A slight improvement in the key inputs can substantially increase the value of the firm. This improvement in the valuation ultimately benefits the shareholders and other stakeholders like the customers, employees, the government and various other bodies finally benefiting the society as a whole.

Theories of Mergers and Tender Offers

- Redeployment of corporate assets accomplished through mergers, tender offers, joint ventures, divestitures and spin-offs have many theories involved to justify the activities. Theories involved are: efficiency theories, information and signaling theory, agency problems and managerialism theories, free cash flow hypothesis, market power, taxes and redistribution.
- The efficiency theories emphasize on the fact that merger and other such forms of asset redeployment have potential for social benefits. These involve improving on the present performance of the management and achieving synergies. It includes the differential managerial efficiency, inefficient management, operating synergy, pure diversification, strategic realignment to changing environments and undervaluation theories.
- The empirical observation that shares of the target company, in case of a tender offer, have an upward revaluation followed by a tender offer has given way to the emergence of information hypothesis. The information hypothesis states that the tender offer generates new information and that the revaluation is permanent. Signaling is involved in mergers and tender offers in a number of ways. The fact that the firm has received a tender offer is itself a signal to the market that the firm possesses unrecognized additional values or that the future cash flow streams would be rising very shortly.
- The firm faces an agency problem when the managers own a fraction of the shares of the firm. Such a partial ownership causes managers to work less vigorously and to take away more of the perquisites. Free cash flow hypothesis comes as a rescue to the agency costs involved in a takeover activity. The hypothesis states that the free cash flow must be paid to the shareholders if the firm has to remain efficient and intends to maximize its share price.
- A merger activity is also taken up for an increase in market shares and the tax-minimizing opportunities resulting from it.

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Sell-offs and Divestitures

- Sell-offs and divestitures, major forms of corporate restructuring, act as means of eliminating or separating a product line, division or subsidiary. The shareholders expect a positive NPV that would contribute for the goal of maximizing shareholders' wealth, as the decision for going for sell-offs is voluntary, taken by the management. Many hypotheses go forward to explain the value increase observed in sell-offs.
- Tax and regulatory factors are attributed as a major source for the increase in value in many sell-offs. Parent firms with assets that create negative returns go for sell-offs. The management efficiency is increased as a result of sell-offs and divestitures. It expands and harvests the sound investment decisions taken earlier. It may also represent the correction of decisions taken earlier. It also reflects organizational learning or re-orientation of business strategies. It also depicts the movement of business resources to higher-valued uses.
- Voluntary liquidation, another form of corporate restructures, is similar to divestitures in terms of characteristics and motives excepting that liquidations involve the sale of the total firm.

Methods of Payment and Leverage

- Researches on the methods of payments being used to effect payment under mergers revealed that there are significant differences in the returns to stakeholders of the bidder and target returns depending on the payment mode used. Target shareholders will have higher abnormal returns when paid in cash than by stock offers. Bidder returns are also higher when payment is done by cash. It is also well established that between the management resistance and the method of payment, it is the method of payment that was found to influence the returns more significantly. Various theories go into explaining the effect of the method of payment. According to one theory, since the taxable gains of the target shareholder are deferred infinitely in case of a stock-for-stock exchange and that of the cash transaction are paid immediately, cash offers must therefore be higher as a token of compensation. Another theory states that the availability of asset write-ups for future depreciation tax shelters explains the higher returns to the bidders in case of cash offers. The information and signaling hypothesis also sets the explanation for the cash offers giving higher returns.
- Junk bonds i.e., the bonds that are rated below investment grade or are unrated, have been a recent phenomena in the merger and acquisition activity. Their use arose owing to the changing conditions in the economy and in the financial markets.

Joint Ventures

- Joint Ventures represent a form of relationship between two or more business entities to achieve common strategic objectives and are widely used by business firms. They are typically formed for special purposes for a limited duration. The participants of the joint venture continue to exist as separate firms with a joint venture representing a newly created business enterprise. A joint venture may be structured as a partnership, a corporation, or any other form of organization.
- As joint venture represents a new thrust by each participant, it is also called a strategic alliance. The main motive for joint ventures is to reduce the investment outlay required and share risks. A small firm may have a new product idea that involves high risks and requires relatively large amounts of investment capital. Another larger firm may be able to carry the financial risk and may be interested in becoming involved in a business entity that promises growth and profitability. By investing in a large number of such ventures, the larger firm has limited risk in any one while enjoying the possibility of very high financial pay-offs. There are several other general motives for joint ventures which can be summarized as achievements of economies of scale, supply of raw materials, sharing of technology, etc.
- Like all contracts, JV contracts are also subjected to difficulties. Each participant hopes to gain as much as possible from the interaction, but would like to limit the gains to the other participants. Some of the reasons for failure of joint ventures may be inadequate pre-planning, refusal to share knowledge, or inability of parent companies to share control or compromise on difficult issues. Thus, joint ventures present many attractive opportunities but they also pose difficult challenges.

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ESOPs and MLPs

- An Employee Stock Ownership Plan (ESOP) is a type of stock bonus plan wherein investments are made primarily in the securities of the sponsoring employer firm. It promotes employee stock ownership and facilitates the raising of capital by employers. It proves valuable for privately held companies engaged in ownership transfer and for firms nearing their debt capacity limits. It's a general belief that employees who own stocks in their employer's firm are more productive as they have a greater stake in its profits. ESOPs act as financing tools as well. It provides additional debt capacity to highly leveraged firms and also provides market for equity financing for closely held firms. It is also taken as an antitakeover defense mechanism. The further development of ESOPs would have a significant impact on the corporate activities and the economy.
- In USA, the Master Limited Partnership (MLP) has made its position as a new form of business organization in recent years. It refers to a type of limited partnership but with shares being publicly traded. Tax advantages were a major factor for the development of the MLPs. MLPs enjoy the tax benefits due to the differential between personal and corporate income tax rates and their status as non-taxable entities. These benefits are enjoyed following the Tax Reforms Act, 1986 (TRA 86) of USA.
- MLPs also provide liquidity advantages to the investors making them view these as simply another component in the equity portfolio rather than a long-term method of sheltering income from taxes.

Going Private and Leveraged Buyouts

- Going private refers to the act of a public corporation transforming itself into a privately held firm. The term is used in various ways. In some cases, it may refer to the controlling shareholders squeezing out the minority shareholders. Going private can also be through Leveraged Buyout (LBO), a frequent form of corporate restructuring. A LBO is an acquisition that is financed largely by borrowing all the stocks or assets of a public limited company by a small group of investors. Specialists or investment bankers who arrange the deal generally sponsor the buying group. Debt financing represents 50 percent or more of the purchase price and is secured by the assets of the acquired firm.
- A LBO operation is generally carried out in four stages. The first stage involves raising the required cash for the buyouts and devising a management incentive system. In the second stage, the organizing sponsor group buys all the outstanding shares of the company and takes it private. The group may even purchase all the assets of the company and forms a new privately held corporation. The third stage involves the new corporation cutting down the operating costs and changing the marketing strategies to increase the profits and cash flows. The fourth stage is the stage when the investor group has to decide if the company is to be taken public if the company emerges strong and the goals have been achieved. Such a procedure is referred to as a reverse LBO. It is effected through public equity offering, better known as Secondary Initial Public Offering (SIPO). Such a conversion creates liquidity for the existing stockholders.
- A variant of going private is the Unit Management Buyout (MBO). In a unit MBO, a purchasing group led by an executive from the parent company acquires a division or a subsidiary of a public corporation. A LBO or a MBO can be used as an antitakeover method against an unwanted takeover. And sometimes they stimulate competing bids once announced.

International Mergers and Restructuring

- Lately, the economy is seeing the growth of international mergers. These share most of the similar influences and motivations with domestic mergers. However, the threats and opportunities seen by international mergers are unique to them.
- Firms going in for international mergers have to analyse their costs and synergies carefully. Once they decide to go for it, it can be implied that costs to be incurred in the merger activity would be justified by the increased productivity and the synergy. In case of a horizontal merger, intangibles play an important role in both domestic as well as international mergers. Similarly, in vertical integration, firms try to internalize markets for intermediate products.

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- Tariff barriers and exchange rate relationships influence the international mergers more than the domestic mergers. In spite of the reduced costs and the synergies expected from the international merger, there always hangs the risk of operating in a foreign environment. This can however be reduced through proper planning and by following an incremental approach while entering a foreign market. The international M&A activity has been growing in the recent past and is expected to continue in the future as well.

Share Repurchase and Exchanges

- Share repurchase and exchange offers are both considered to be areas of practical significance to the corporate management. Both have some similarities in their motives and affects on firms and shareholders. Share repurchases for cash affects the firm's leverage ratio. Empirical studies show that the abnormal returns are much higher when the exchange is financed by debt rather than by cash, though significant positive returns are seen in cash transactions as well.
- In USA, gains on the repurchases enjoyed by the shareholders are taken as capital gains. However, the Tax Reform Act, 1986, reduces the benefits from this, due to the increase in the tax rate. Hence, tax effects play a small role in the gains.
- Gains on the repurchases are also influenced by the information and signaling hypothesis. When the leverage increases, it is a signal to the shareholders that the cash flows will be sufficiently high in the future and would cover higher interest payments. Also, the repurchase of shares at premiums over the current market price is a signal that the management considers the shares as undervalued by the market. Moreover, the repurchase premium is also considered as a takeover defense measure.
- The exchange offers enable the firm to change its capital structure while holding the investment policy unchanged. The basic characteristics of the exchange offer are: it increases leverage, it implies an increase in future cash flows, and it implies that the market has undervalued the common stock.

Corporate Control Mechanisms

- Proper internal monitoring and effective control mechanisms can sort out many of the corporate problems. Corporate performances influence the internal management of the firm. Poor performance by the firm can cause a change in the top management. In case of industry-wide problems, it is the external control mechanisms that influence the board to restructure the firm's operations. Such problems require tougher managerial decisions. Existence of a majority shareholder can result in active involvement in the management and theory maximization of value for even the minority shareholders.
- The market values corporate control. The shares with superior voting rights sell at a premium. Such shares represent the present value of the takeover premium if carried out in the future.
- The insiders of the firm use dual class recapitalization for the consolidation of control, protecting them from displacement by a hostile takeover. Proxy contests are also a way for exercising corporate control. However, the costs involved in them are high.

Takeover Defenses

- There exists a lack of harmony in a takeover activity. There always lies a debate on the desirability of having an auction for the target, the coerciveness of tender offers, and the bargaining role of the management. People against takeovers argue that they increase costs and result in inefficiency in the operation of the market for corporate control. As per some of the researchers, coerciveness of tender offers should not pose any problem given that the takeover market is competitive. Whatever be the arguments, there would always be optimal incentives for takeover activities along with the existence of antitakeover mechanisms, and rather they would become more innovative.
- Poison pills, defensive adjustments in the assets and in the ownership structure, and share repurchases by the target company and such other methods of takeover defense mechanisms have a negative impact on the stock prices of the target company and reduce the success rate of the takeover bids. Corporate charter amendments and classified board are other measures of reducing the takeover bid frequencies.

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Management Guides for M&A Activity

- Strategic planning process plays an important role in the life cycle of a firm. The process involves assessment of the firm's environment, analysis of the firm's resources and capabilities, and studying the opportunities. Goals are formulated at this stage. Plans for mergers and acquisitions are also made in order to help move the firm closer to its goals. The process is never complete as the firm's capabilities keep changing with respect to the environment.
- Firms are of late being defined more in terms of their range of capabilities rather than in terms of the products and markets. This obviously creates opportunities as well as increases competitive threats in the dynamic economy. Studies carried out have enabled to draw certain conclusions about M&As: a) mergers, takeovers and restructuring create value, the shareholders of the acquired firm gain while those of the acquiring firm do not lose; b) availability of alternative investment opportunities affects the usage of M&As in order to achieve the firm's goals; c) M&As are followed by an increase in the leverage; d) capital outlays have also increased following M&As.
- The financial analysis of the merger candidate supplements the planning framework for M&A analysis. The acquiring company should not be paying too high a price for the target company. Various model approaches are considered for arriving at the price of the target company. All the approaches go for maximizing the returns on investments by controlling costs and minimizing investments.

Models of the Takeover Process

- Various factors influence the structure of formal models used in a merger and acquisition activity. Some of the factors involved are: choice of the model; the form of the auction and the game, if the merger is a friendly or an unfriendly one; investigation costs of the first and the subsequent bidders; the information provided by the target firm to all or some of the bidders; affects of taxes on the forms of transactions, etc. Models can be formed based on the different combinations of the factors that are of concern to the acquirer. The free-rider problem is a common problem prominent in a diffusely held corporation. Many shareholders simply free ride on the investigation and monitoring efforts of other shareholders and enjoy the benefits later on without any efforts of their own. Spatt states that it is unclear if an unconditional tender offer can provide an equilibrium basis for the free rider interpretation. However, the problem would not arise if tender offers were made conditional on a minimum number of shares being tendered.
- The Shleifer and Vishny Model studies the implications of an increase in the holdings of shares by a large shareholder. The existence of alternative mechanisms for influencing corporate policies enables the small shareholders to realize that the large shareholders' tender offers yield higher profits.
- The Hirshleifer and Titman model establishes the theory that the bidders experiencing low potential gains from takeovers would bid low so that they are able to separate themselves from the bidders expecting high gains. A high gain bidder bids high in order to ensure success. The model also studies the situation wherein anticipation of the dilution of the value of shares of the minority shareholders is made after the completion of a successful takeover. The model also examines the contingent cost defenses and the litigation.
- The Jegadeesh and Chowdhry model investigates the bidder's strategy for pretender offer acquisition of target shares. It takes into consideration the level of synergy as observed by the bidder, which is unknown to the shareholders. The Fishman model directs the takeover process with bids made to management as against the earlier models that were directed towards the minority shareholders.

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Part I: Questions on Basic Concepts

Overview

1. Which of the following restructuring activities **does not** result in an expansion of a firm?

a. Joint Ventures.

b. Mergers.

c. Divestitures.

d. Acquisitions.

e. None of the above.

2. Which of the following activities is/are **not** associated with spin-off?

a. Creation of a new legal entity.

b. Distribution of shares to a portion of existing shareholders in a subsidiary in exchange for parent company stock.

c. Distribution of shares on pro rata basis to existing shareholders of the parent company.

d. Separation of control.

e. All of the above.

3. Firm X plans to sell-off a part of the firm via an equity offering to outsiders. Which of the following means shall be applied by the company for executing its plan?

a. Equity Carve Out.

b. Spin-off.

c. Split Up.

d. Divestiture.

e. Tender Offer.

4. Changes in the company by laws to make the acquisition of a company more difficult or more expensive are referred to as

a. Takeover

b. Antitakeover Amendments

c. Corporate Control

d. Proxy Contests

e. None of the above.

5. Divestiture involves which of the following activities?

i. Distribution of shares to the existing shareholders of the parent company.

ii. Sale of a portion of the firm through an equity offering.

iii. Sale of a portion of the firm to an outside third party in consideration of cash or equivalent thereof.

a. Only (i) above.

b. Both (i) and (iii) above.

c. Only (ii) above.

d. Only (iii) above.

e. All of the above.

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6. Which of the following activities **does not** involve a change in the ownership structure?

a. Share Repurchase.

b. Going Private.

c. Exchange Offers.

d. Leveraged Buyout.

e. Proxy Contest.

7. Which of the following is referred to as “a going private transaction” initiated by the incumbent management?

a. Management Buyout.

b. Leveraged Cash out.

c. Management Buy-in .

d. Leveraged Recapitalization.

e. None of the above.

8. Which of the following statements is **not true** regarding Standstill Agreement?

a. It is an oral agreement.

b. It is a voluntary contract.

c. It is a takeover defense.

d. Agreement where the stockholder, who is bought out, agrees not to make further investments in the target company during a specified period of time.

e. None of the above.

9. A transaction which forms one economic unit from two or more previous units is called

a. Joint Venture

b. Merger

c. Corporate Control

d. Divestiture

e. None of the above

10. Which of the following types of mergers is/are mostly featured in the first merger movement (1895-1904)?

a. Vertical Mergers.

b. Horizontal Mergers.

c. Concentric Mergers.

d. Conglomerate Mergers.

e. All of the above.

11. In USA, which of the following merger movements was/were accompanied by the completion of the transcontinental railroad system, the advent of electricity, and the increased use of coal?

a. The 1895-1904 Merger Movement.

b. The 1922-1929 Merger Movement.

c. The 1965-1969 Merger movement.

d. The 1981-1989 Merger Movement.

e. Both (a) and (d) above.

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12. Use of junk bonds to finance acquisitions is a unique feature of which merger movement?

a. The 1895-1904 Merger Movement.

b. The 1922-1929 Merger Movement.

c. The 1965-1969 Merger movement.

d. The 1981-1989 Merger Movement.

e. Both (a) and (b) above.

13. Which of the following is/are **false**?

i. The quasi rent is the return necessary to maintain an asset's current service flow.

ii. A quasi rent represents a recovery of sunk costs when profits are included in its measurements.

iii. The quasi rent value is the present value of a stream of quasi rents.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (ii) and (iii) above.

14. According to Prescott and Visscher, firm specific informational assets known as organization capital includes

a. Information used in assigning employees to tasks that they can best fulfill

b. Information used in matching employees for the formation of teams

c. Information that each employee acquires about other employees and about the organization itself

d. Both (a) and (c) above.

e. All of the above.

15. Investment opportunities can take the form of

i. Internal investment where there is expansion of existing projects or the addition of new projects internally

ii. External investment in the form of mergers

iii. Restructuring.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. All of the above.

Merger Types and Characteristics

16. A merger of firms engaged at different stages of production but in the same industry is called

a. Horizontal Merger

b. Vertical Merger

c. Conglomerate Merger

d. Subsidiary Merger

e. Reverse Merger.

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17. Financial conglomerate mergers **do not** engage in which of the following activities?

a. Providing a flow of funds to each segment of their operations.

b. Providing staff expertise and staff service.

c. Exercising control.

d. Taking financial risks.

e. None of the above.

18. Which of the following statements is/are **true** regarding product extension mergers?

a. They broaden the product lines of firms.

b. They widen the geographic area of operations of the firm.

c. They are also called concentric mergers.

d. All of the above.

e. Both (a) and (c) above.

19. Concentric mergers differ to managerial conglomerate mergers in transferability of which of the following functions?

a. General management functions.

b. Specific management functions.

c. Both Specific and General management functions.

d. Generic management functions.

e. None of the above.

20. Which of the following statements does a synergy mean?

a. The merger between two firms.

b. Acquisition of one firm by another.

c. A phenomenon where the total performance of the combined firm will be greater than the sum of individual parts.

d. Both (a) and (b) above.

e. None of the above.

21. The introductory stage of a industry life cycle is associated with which type of mergers?

i. Vertical Mergers.

ii. Horizontal Mergers.

iii. Conglomerate Mergers.

iv. Concentric Mergers.

a. Both (i) and (ii) above.

b. Both (i) and (iii) above.

c. Both (ii) and (iii) above.

d. Both (iii) and (iv) above.

e. All of the above.

22. An improvement in the capabilities of managers and other employees through their experiences by being in the field is termed as

a. Organizational Learning

b. Organizational Capital

c. Organizational Behavior

d. Organizational Culture

e. None of the above.

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23. Which of the following motives for mergers **does/do not** make economic sense?

a. Merging to increase earnings per share.

b. Merging to reduce risk by diversification.

c. Merging to lower financing costs.

d. Both (a) and (c) above.

e. All of (a), (b) and (c) above.

24. Which of the following is **not** a/are legal requirement(s) with respect to a merger?

a. Intimation to stock exchanges where both the companies are listed about the amalgamation proposal.

b. Application to the Supreme Court to enable convening of meetings of shareholders and creditors for passing the amalgamation proposal.

c. Approval of draft amalgamation proposal by the respective boards of both the companies.

d. Publishing notice of meetings in two newspapers (one English and one vernacular).

e. Both (a) and (d) above.

25. Where a meeting of shareholders has been called to approve the scheme of amalgamation, such meeting should be approved by

a. Two-thirds of those present at the meeting and voting

b. One-half of those present at the meeting

c. At least seventy five percent (in value) of shareholders, in each class, who vote either in person or by proxy

d. Three-fourths of those present at the meeting

e. The unanimous consent of all those present at the meeting.

Principles of Valuation

26. Net present value method of capital budgeting represents

a. The discount rate at which the net terminal value of all cash flows is zero

b. The present value of all future cash inflows discounted at the cost of capital minus the cost of investment also discounted at the cost of capital

c. The ratio of the average annual profits after taxes to the investment in the project

d. The number of years required to recover the initial cash investment

e. The salvage value of the firm if its operations are stopped.

27. Which of the following is **not** a method of evaluation of projects under capital budgeting?

a. Net Present Value Method.

b. Internal Rate of Return Method.

c. Average Rate of Return Method.

d. Payback Method.

e. Replacement Cost Approach.

28. Which of the following is/are **false**?

i. The net present value is the present value of all future cash flows discounted at the cost of capital – cost of investment.

ii. Net present value assumes reinvestment at the cost of capital.

iii. A project which has a positive NPV is profitable.

iv. The NPV method does not satisfy the Value Additivity Principle.

a. Only (i) above.

b. Only (ii) above.

c. Only (iv) above.

d. Both (i) and (iv) above.

e. Both (ii) and (iv) above.

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29. Which of the following is the correct goal for decision makers?

a. Maximizing the NPV.

b. Maximizing IRR.

c. Minimizing the Pay-off Period.

d. Reducing Capital Expenditure.

e. None of the above.

30. Which of the following expressions represent cash flow from operations on a gross basis?

a. Net income + Depreciation + After tax interest.

b. Net income + Depreciation.

c. Net income + After-tax interest.

d. Net income.

e. None of the above.

31. Free cash flow is **not** used for which of the following purposes?

a. Interest Payment on Pre-tax Basis.

b. Preference Dividend.

c. Equity Dividend.

d. Buy-back of Equity Shares.

e. Amortization of Bonds.

32. Identify the **correct** statement.

a. The discounted cash flow approach to valuation views the firm as a going concern.

b. As per the discounted cash flow approach the firm is expected to stabilize and reach a steady state before the explicit forecast period.

c. As per the discounted cash flow approach, the ROCE, reinvestment rate and the growth rate remain constant in perpetuity after the explicit forecast period.

d. Both (a) and (c) above.

e. Both (b) and (c) above.

33. Which of the following statements is/are **not true**?

a. Under the DCF approach, cost of capital is calculated in post-tax terms because the free cash flow is expressed in post-tax terms.

b. Calculation of weighted average cost of capital includes non-interest bearing liabilities such as trade creditors.

c. Cost of capital reflects the risks borne by various providers of capital.

d. Under the DCF technique, the cost of capital is based on book value weights for each component of financing.

e. Both (b) and (d) above.

34. A firm can invest Rs.1,00,000 now to receive Rs.30,000 per year for ten years. The cost of capital for this project is 12 %. What is the NPV of the project?

a. Rs.56,483.

b. Rs.60,000.

c. Rs.65,906.

d. Rs.69,506.

e. Rs.70,000.

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35. Which of the following statements is/are **false**?

i. IRR is the discount rate which makes the NPV equal to zero.

ii. IRR assumes reinvestment at the cost of capital.

iii. When the IRR exceeds the cost of capital the project is accepted.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (ii) and (iii) above.

e. None of the above.

36. A firm can invest Rs.1,20,000 now to receive Rs.24,000 per year for 15 years. Calculate the IRR of the project.

a. 15%

b. 16%

c. 17%

d. 18%

e. 19%.

37. What is the value of a firm, whose annual FCFF of Rs.1 lakh is expected to remain constant in perpetuity and whose cost of capital is 12%? Assume tax rate as zero.

a. 8 lakh

b. 8.5 lakh

c. 8.3 lakh

d. 9 lakh

e. Data insufficient.

38. Which of the following formulae denotes the value of the firm which has supernormal growth followed by no growth?

a. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$

b. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g_c} \times \frac{(1+g_s)^{n+1}}{(1+k)^n}$

c. $V_0 = \frac{X_0(1-T)(1-b)(1+g)}{k-g}$

d. $V_0 = \frac{X_0(1-T)}{k}$

e. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g}$

39. According to the dividend growth valuation model, the value of equity of a firm having temporary supernormal growth, followed by constant growth is given by the formula

a. $S_0 = \sum_{t=1}^{n}\frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1+g_s)^{n+1}}{k_e(1+k_e)^n}$

b. $S_0 = \sum_{t=1}^{n}\frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1-b_c)(1+g_s)^{n+1}}{(k_e-g_c)(1+k_e)^n}$

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c. $V_0 = \dfrac{X_0(1-T)(1-b)(1+g)}{k-g}$

d. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\dfrac{(1+g_s)^t}{(1+k)^t} + \dfrac{X_0(1-T)(1-b_c)}{k-g_c} \text{ x } \dfrac{(1+g_s)^{n+1}}{(1+k)^n}$

e. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\dfrac{(1+g_s)^t}{(1+k)^t} + \dfrac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$

40. Estimate the value of a firm (V_0) whose cost of equity is 15% and whose earnings are projected to grow 10% per year. The current year's free cash flow to equity holders is 2 lakh.

a. 40 lakh

b. 54 lakh

c. 46 lakh

d. 50 lakh

e. 44 lakh.

41. The equation $V_0 = \dfrac{X_0(1-T)(1-b)(1+g)}{k-g}$

Where, X_0 = net operating income, T = tax rate, b = ratio of net investment to after tax NOI, g = constant growth rate and k = cost of capital, represent which basic model of the free cash flow valuation?

a. No growth.

b. Constant growth.

c. Supernormal growth followed by no growth.

d. Supernormal growth followed by constant growth.

e. All of the above.

42. Which of the following methods of valuation is also called relative valuation?

a. Discounted Cash Flow Approach.

b. Comparable Company Approach.

c. Option Pricing Model Approach.

d. Adjusted Book Value Approach.

e. Replacement Cost Approach.

43. Which of the following provides an estimate of the minimum value of the firm?

a. Liquidation Value.

b. Investment Value.

c. Book Value.

d. Replacement Value.

e. Asset Value.

44. If replacement cost of an asset is higher than the economic value, which in turn is higher than the realization value, the loss on deprivation of the asset is the

a. Replacement Cost

b. Realizable Value

c. Economic Value

d. Average of Replacement Cost and Realizable Value

e. None of the above.

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45. Which of the following statements is/are **false** with respect to the cost of capital?

i. The cost of capital is the rate to be used for discounting the free cash flows to their present values.

ii. The cost of capital is the cost of debt i.e., the expected return that lenders hope to make on their investment.

iii. The cost of capital is the cost of equity i.e., the rate of return the investors require on the equity investment in the firm.

iv. The cost of capital is the weighted average of costs of all sources of capital.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (iv) above.

e. Both (ii) and (iii) above.

46. The cost of equity capital is estimated by employing which of the following methods?

a. Capital asset pricing model.

b. Dividend growth model.

c. Average investor's realized yield.

d. Bond yield + Equity risk premium.

e. All of the above.

47. $k_e = R_f + [R_m - R_f]\,\beta$ represents which of the following methods of estimating the cost of equity?

a. Dividend growth model.

b. Bond yield + Equity risk premium model.

c. Capital asset pricing model.

d. Average investor's realized yield.

e. Arbitrage pricing model.

48. The weighted average cost of capital is calculated as

a. $k = k_b\,(1–T)\,(B/V)$

b. $k = k_e\,(S/V)$

c. $k = k_b\,(1–T)\,(B/V) + k_e\,(S/V) + k_p\,(P/V)$

d. $k = k_b\,(1–T)\,(S/V) + k_e(B/V) + k_p\,(P/V)$

e. $k = k_b\,(1–T)\,(B/V) \times k_e\,(S/V) \times k_p\,(P/V)$.

49. The approach of estimating the cost of equity capital as the rate which investors historically have required as their return on investment is called the

a. Capital Asset Pricing Model

b. Average Investor's Realized Yield

c. Bond Yield plus Equity Risk Premium

d. Asset Pricing Model

e. Dividend Growth Model.

50. If the risk-free rate is 8%, beta 1.5 and the market rate of return 12%, then the cost of capital according to CAPM is equal to

a. 10%

b. 12%

c. 13.5%

d. 14%

e. 14.25%.

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51. A firm's Earnings per Share (E/S) for the coming year is estimated by industry analyst to be Rs.30. The firm has one lakh shares of common stock outstanding. The industry, in which the firm competes currently, has an average price earnings ratio of 20. What is the firm's estimated price per share and market value?

a. Rs.600, Rs.5 crore.

b. Rs.500, Rs.5 crore.

c. Rs.600, Rs.6 crore.

d. Rs.500, Rs.6 crore.

e. Data insufficient.

52. Dynamic company plans to acquire United Company. Dynamic Co. is willing to offer Rs.90 per share for United. The current market price of Dynamic is Rs.150. Estimate the exchange ratio.

a. 0.3 shares.

b. 0.4 shares.

c. 0.5 shares.

d. 0.6 shares.

e. 0.7 shares.

53. Acquiring company is considering the acquisition of Target Company in a stock-for-stock transaction in which, Target Company would receive Rs.80 for each share of its common stock. The market price of the target company was Rs.60 and the market price of the acquirer was Rs.50 before the merger. Calculate the purchase price premium.

a. 30%

b. 33.33%

c. 41%

d. 50%

e. 66.67%

54. Which of the following methods of valuation states that the assets of the business are worth what it would cost to replace them?

a. Asset Oriented Approach.

b. Comparable Company Approach.

c. Adjusted Book Value Approach.

d. Replacement Cost Approach.

e. Discounted Cash Flow Approach.

55. Which of the following statements is **not true** regarding the purchase method of accounting?

a. Under purchase method, the buyer company treats the acquired company as an investment.

b. Tangible assets are to be reported at fair market value as per the purchase method.

c. If the premium paid exceeds the write-up of assets, the difference must be reflected as goodwill on the buyer's balance sheet.

d. Goodwill charges are deductible for tax purposes.

e. Goodwill that is reflected in the buyer's balance sheet must be written-off against future income.

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56. The adjusted book value approach to valuation of firms

a. Relies on the historical book values of assets and liabilities

b. Is a pointer to the liquidation value of the firm

c. Involves estimation of the market value of the assets and liabilities of the firm as a going concern

d. Both (b) and (c) above

e. None of the above.

57. Which of the following is a non-cash flow method of estimating the continuing value?

a. Value Driver Method.

b. Price Earnings Method.

c. Replacement Cost Method.

d. Both (b) and (c) above.

e. All of (a), (b) and (c) above.

58. In the equation $NAV = [V_{AB} - (V_A + V_B)] - (P + E)$

Where,

V_{AB} = the combined value of the two firms

V_B = the market value of the shares of B

P = premium paid for B

E = expenses of the acquisition process

V_A = A's measure of its own value.

Which term represents the synergistic effect?

a. $(V_A + V_B)$

b. V_{AB}

c. $(P + E)$

d. $[V_{AB} - (V_A + V_B)]$

e. $[V_{AB} - (V_A + V_B)] - (P + E)$.

Theories of Mergers and Tender Offers

59. Which of the following theories holds that mergers and other forms of asset redeployment have potential for social benefits?

a. Free Cash Flow Hypothesis.

b. Market Power.

c. Efficiency Theories.

d. Information and Signaling.

e. Managerialism.

60. Which of the following terms is also used to describe the Differential Efficiency theory?

a. Operating Synergy Hypothesis.

b. Financial Synergy Hypothesis.

c. Inefficient Management.

d. Managerial Synergy Hypothesis.

e. None of the above.

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61. Differential efficiency theory is more likely to be the basis for

a. Horizontal Mergers
b. Vertical Mergers
c. Conglomerate Mergers
d. Both (a) and (b) above.
e. None of the above.

62. Which of the following statements is/are **true** regarding inefficient management theory?

i. It represents management that is inept in an absolute sense.
ii. Any other management can do better than the target management.
iii. Target and the acquirer firms management operate at different efficiency levels.
iv. It represents management that is performing to its full potential.

a. Both (i) and (ii) above.
b. Both (i) and (iii) above.
c. Both (ii) and (iii) above.
d. Both (ii) and (iv) above.
e. All of the above.

63. Which of the following statements does an Operating Synergy theory imply?

a. Economies of scale exist in an economy.
b. Prior to the merger, the two merged firms operated at levels of activity that fall short of achieving the potentials for economies of scale.
c. Prior to the merger the two firms operated at different levels of managerial efficiencies.
d. Prior to the merger one of the firms management was inept.
e. Both (a) and (b) above.

64. Which of the following theories is/are based on complementarities between merging firms in the availability of investment opportunities and internal cash flows?

a. Operating Synergy.
b. Reverse Synergy.
c. Financial Synergy.
d. Managerial Synergy.
e. All of the above.

65. Strategic planning approach to mergers implies the

a. Possibilities of economies of scale
b. Tapping a firm's underused capacity
c. Concern with firms environment and constituencies
d. All of the above
e. None of the above.

66. When managers own only a fraction of the ownership of a firm, they tend to work less vigorously than otherwise and tend to consume more perquisites. To which problem is the statement referring to?

a. Inefficiency Problem.
b. Agency Problem.
c. Efficiency Problem.
d. Hubris Hypothesis.
e. None of the above.

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67. Roll's theory that acquiring firm managers commit errors of over-optimism in evaluating merger opportunities and end up paying too high for acquisitions is commonly called the

a. Free Cash Flow Hypothesis

b. Managerialism

c. Hubris Hypothesis

d. Market Power

e. Agency Problem.

68. Difference between the market value assets and their replacement costs is an aspect of which theory?

a. Strategic Realignment.

b. Financial Synergy.

c. Undervaluation Theory.

d. Information.

e. None of the above.

69. Which of the following theories state(s) that particular actions may convey other significant forms of information?

a. Information.

b. Signaling.

c. Managerialism.

d. Both (a) and (b) above.

e. None of the above.

70. In one market, 5 firms each hold 10 percent market share and the remaining 50 percent is held by 50 firms, each with a 1 percent market share. Its H index would be

a. 500

b. 600

c. 550

d. 450

e. 400.

71. Which of the following theories says that mergers take place in response to environmental changes?

a. Strategic Alignment.

b. Diversification.

c. Market Power.

d. Redistribution.

e. None of the above.

72. Which of the following **does not** show a rationale for merger?

a. Information and Signaling.

b. Taxes.

c. Reverse Synergy.

d. Market Power.

e. None of the above.

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73. Which of the following theories is employed by firms to increase the probability that the organization and reputation capital of the firm will be preserved?

a. Strategic Alignment.

b. Diversification.

c. Synergy.

d. Redistribution.

e. None of the above.

74. Conflict of interest between whom, among the following, give(s) rise to agency problems?

a. Employees and Managers.

b. Employees and Debtholders.

c. Managers and Shareholders.

d. Managers and Government.

e. All of the above.

75. Which of the following theories suggests that self-serving managers make ill-conceived combinations solely to increase the firm size and their own compensation?

a. Hubris Hypothesis.

b. Agency.

c. Managerialism.

d. Market Power

e. Diversification.

76. Which of the following is **not** a tax motivation for mergers?

a. Substitution of capital gains for ordinary incomes.

b. Carry-over of net operating losses.

c. Tax credit carry-overs.

d. Achieving a stepped-up asset basis.

e. None of the above.

77. The acquired firm can inherit desirable tax attributes if it has

a. Superior management of the acquirer company

b. No accumulated tax losses

c. Continuity of interests

d. Corporate continuity

e. All of the above.

Sell-offs and Divestitures

78. Which of the following is **not** considered as a reason for sell-offs?

a. Tax and Regulatory Effects.

b. Synergy.

c. Poor Fit.

d. Information Effects.

e. Management Efficiency.

79. Which of the following is referred to as "Split off IPOs"?

a. Spin-offs.

b. Spin Ups.

c. Equity Carve Out.

d. Divestiture.

e. None of the above.

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80. Which of the following is/are **true** regarding negative synergy?

i. Is also called anergy or reverse synergy.

ii. Caused by units which are a poorly fit with the remainder of parent company's operations.

iii. Caused by units that perfectly fit with the parent company's operations.

a. Only (i) above.

b. Only (ii) above.

c. Both (i) and (ii) above.

d. Both (i) and (iii) above.

e. All of (i), (ii) and (iii) above.

81. Sale of a total firm, in parts, is usually referred to as

a. Divestiture

b. Split Off

c. Equity Carve Out

d. Liquidation

e. Spin-off.

82. Which of the following statements according to A.F. Furguson are **true** regarding motives for divestitures?

i. Focus on core businesses for the divesting firm.

ii. Declining profitability of business(es) in which the firm is operating.

iii. Getting rid of unprofitable businesses.

iv. Need for funds for other activities.

a. Only (i) above.

b. Only (i) and (ii) above.

c. Only (iii) and (iv) above.

d. Only (ii) and (iii) above.

e. All of the above.

83. Which of the following statements are **true** in case of equity "carve out"?

i. Distribution of shares is made on a pro rata basis to the shareholders of the parent firm as a dividend.

ii. The stock of the subsidiary is sold in public markets for cash which is received by the parent.

iii. Parent firm maintains control over subsidiary assets and operations.

iv. Parent firm no longer has control over the subsidiary assets.

a. Both (i) and (iii) above.

b. Both (i) and (iv) above.

c. Both (ii) and (iii) above.

d. Both (ii) and (iv) above.

e. All of the above.

84. An acquisition followed by the divestiture of some or all of the operating units of the acquired firm which are presumably worth more in pieces than as a going concern is called the

a. Bust-up Takeover

b. Coercive Tender Offer

c. Partial Tender Offer

d. Take-out Merger

e. None of the above.

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85. Which of the following hypotheses holds that the **true** value of the subsidiary assets is hidden by the complexity of the business structure in which they are rooted?

a. Bondholder Expropriation Hypothesis.

b. Managerial Efficiency Hypothesis.

c. Management Incentives Hypothesis.

d. Information Hypothesis.

e. Hubris Hypothesis.

86. Which of the following statements represent(s) the managerial efficiency hypothesis?

a. The efficiency of the management is prominent in a single industry scenario, also referred to as pure play.

b. Preference for pure play securities stems from lack of confidence in market ability to value complex organizations.

c. Preference for pure play securities is due to the perceived inability of managers to manage them effectively.

d. Agency costs are involved while evaluating the gains to shareholders.

e. Both (a) and (b) above.

Methods of Payment and Leverage

87. Bonds which are sub-investment grade from the date of issuance are called

a. Junk Bonds

b. High Rated Bonds

c. Low Yield Bonds

d. Investment Rated Bonds

e. None of the above.

88. Which of the following investment banks first wrote the new-issue junk bonds?

a. Morgan Stanley.

b. Goldman Sachs.

c. Drexel Burnham Lambert.

d. J P Morgan.

e. None of the above.

89. Which of the following financial products is an outcome of increased inflation rates demanding for huge external financing by business firms during 60-80s, heightened interest rate volatility, deregulation and increased competition among financial institutions?

a. Debentures.

b. Leveraged Buyout.

c. Junk Bonds.

d. Poison Pill.

e. None of the above.

90. According to the signaling hypothesis, which of the following is **not** an/are effect(s) of using the stock as a method of payment?

a. Using the stock implies the bidder to think that the stock is overvalued.

b. Using the stock implies that future cash flows will be large enough to exploit investment opportunities.

c. Using the stock suggests that the bidder may not have sufficient internal financing.

d. Both (a) and (c) above.

e. All of the above.

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91. Which of the following rating descriptions of Standard and Poor's relates to junk bonds?

a. AAA –

b. AA+

c. BBB –

d. BBB +

e. BB –

Joint Ventures

92. Which of the following is **not** a similarity between a merger and a joint venture?

a. Right of mutual control or management of the enterprise.

b. Decrease in the number of firms.

c. Diversification of risks.

d. Sharing of complementary resources.

e. Achieving economies of scale.

93. In recent years, Joint Ventures are also termed as

a. Strategic Alliances

b. Partnership

c. Merger

d. Amalgamation

e. None of the above.

94. Which of the following is **not** a motive for joint venture?

a. To diversify risk.

b. To achieve economies of scale.

c. To share complementary resources.

d. To take advantage of the favorable tax treatment.

e. None of the above.

95. Which of the following statements are **true** regarding a joint venture?

i. Joint ventures result in a decrease in the number of firms.

ii. Joint ventures result in an increase in the number of firms.

iii. In a joint venture, the parents combine to form a new firm and the old firms cease to exist.

iv. In a joint venture, the parents continue their operation and another firm is created.

a. Both (i) and (iii) above.

b. Both (i) and (iv) above.

c. Both (ii) and (iii) above.

d. Both (ii) and (iv) above.

e. None of the above.

96. Which of the following is **not** a feature of Joint Venture?

a. Right to share in the profit.

b. Right of mutual control or management of the enterprise.

c. Contribution of money, effort, knowledge, skill, etc., by the partners.

d. Joint property interest in the subject matter of the venture.

e. None of the above.

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97. A firm employing successive integration strategy uses joint venturing for which of the following reasons?

a. To acquire complementary technologies.

b. As a way of learning about prospective merger partners for a full merger or acquisition at a later date.

c. As an element of long run strategic planning.

d. To provide countervailing power among rivals in a product market.

e. All of the above.

98. Which of the following strategies is used to provide countervailing power among rivals in a product market and among rivals for a scarce resource?

a. Spider's Web Strategy.

b. Successive Integration Strategy.

c. Go together-split Strategy.

d. Strategic Planning.

e. None of the above.

99. According to which of the following strategies is a joint venture used as a way of learning about prospective merger partners leading to a full merger or acquisition?

a. Go together-split Strategy.

b. Spider's Web Strategy.

c. Successive Integration Strategy.

d. Portfolio Balance Strategy.

e. Long-term Strategy.

ESOPs and MLPs

100. Which of the following is **not** a kind of ESOP?

a. Tax Credit.

b. Leveraged.

c. Leveragable.

d. Non-Leveraged.

e. None of the above.

101. Which of the following statements are **true** regarding leveraged ESOPs?

i. The plan is authorized, but is not required to borrow funds.

ii. The plan borrows funds to purchase securities of the employer firm.

iii. They are stock bonus plans which are required to invest primarily in the securities of the employer firm.

iv. The employer firm makes contributions to the ESOP trust in an amount to meet the annual interest payments on loan as well as repayments of the principal.

a. Both (i) and (iv) above.

b. Both (ii) and (iii) above.

c. Both (ii) and (iv) above.

d. Both (iii) and (iv) above.

e. All of the above.

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102. Which of the following statements are **true** regarding defined benefit plan?

i. It makes fixed commitment to a pension plan.

ii. Specifies the amounts that participants will receive on retirement.

iii. Only contributions into the plan are specified and participants receive over the period of their retirement what is in their accounts when they retire.

iv. Benefits are defined in terms of amount per month or percentage of several years' salary according to a preset formula.

a. Both (i) and (iii) above.

a. Both (i) and (iv) above.

b. Both (ii) and (iii) above.

d. Both (ii) and (iv) above.

e. All of the above.

103. Which of the following statements is **false** about the uses of ESOP?

a. ESOPs can be used as a method of raising new capital.

b. ESOPs may be used as a takeover defense.

c. ESOPs may be used in connection with buying private companies.

d. ESOPs may be used in divestiture activities.

e. None of the above.

104. In which of the following types of ESOP plans does a firm contribute a specified number of shares of its common stock into the plan annually?

a. Money Purchase Plan.

b. Profit Sharing Plan.

c. Defined Benefit Plan.

d. Stock Bonus Plan.

e. All of the above.

105. Which of the following terms is referred to as new organizational form which offers investors the liquidity via the organized secondary market for trading of partnership interest?

a. Employee Stock Option Plan (ESOP).

b. Partnership.

c. Joint Stock Company.

d. Master Limited Partnership (MLP).

e. None of the above.

106. Which of the following MLPs is formed by a partnership that is initially privately held but later offers its interests to the public in order to finance internal growth?

a. Roll-up MLP.

b. Roll-out MLP.

c. Liquidation MLP.

d. Start-up MLP.

e. None of the above.

107. A form of MLP through which the corporations can transfer assets to avoid the double taxation of corporate dividends or to establish a value on assets that may be undervalued is the

a. Roll-out MLP

b. Roll-up MLP

c. Liquidation MLP

d. Start-up MLP

e. Acquisition MLP.

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Going Private and Leveraged Buyouts

108. Which of the following terms is given to an acquisition of all the stock or assets of a previously public company by a small group of investors financed largely by borrowing?

a. Going Private.
b. Management Buyout.
c. Management Buy-in.
d. Leveraged Recapitalization.
e. Leveraged Buyout.

109. A division or subsidiary of a public corporation acquired from the parent company by a purchasing group led by an executive of the parent company or members of the unit's management is called the

a. Leveraged Buyout
b. Going Private
c. Management Buyout
d. Management Buy-in
e. None of the above.

110. In which of the following types of LBO transactions do target shareholders simply sell their stock and all interests in the target corporation to the buying group?

a. Asset Purchase Format.
b. Stock Purchase Format.
c. Cash Purchase Format.
d. Both (a) and (c) above.
e. All of the above.

111. The style of financing an LBO deal where cash is raised by borrowing against the company's assets is termed as

a. Subordinated Debt
b. Unsecured Debt
c. Secured Debt
d. Mezzanine Money
e. None of the above.

112. Mezzanine financing used for financing an LBO deal is also termed as

a. Secured Debt
b. Subordinated Debt
c. Senior Debt
d. Junior Debt
e. None of the above.

113. A company going private in an LBO route only to be taken public again at a later date is called

a. Going Public
b. Management Buy-in
c. Reverse LBO
d. Going Private
e. None of the above.

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114. Which of the following is **not** a source of gain in a LBO transaction?

a. Tax Benefits.

b. Management Incentives.

c. Wealth Transfer Effects.

d. Efficiency Consideration.

e. None of the above.

115. It is often observed that small shareholders hold back from tendering to, believing that their decision has no impact on the value increase resulting from the merger, resulting in a failure of the merger. Which of the following terms rightly defines the observed situation?

a. Free Cash Flow Problem.

b. Hubris Hypothesis.

c. Free Rider Problem.

d. Agency Problem.

e. None of the above.

116. The firms involved in a LBO transaction generally face which of the following risks?

i. Business Risk.

ii. Interest Rate Risk.

iii. Exchange Rate Risk.

a. Only (i) above.

b. Only (ii) above.

c. Both (i) and (ii) above.

d. Both (ii) and (iii) above.

e. All of (i), (ii) and (iii) above.

117. A type of financing, often used in leveraged buyouts, in which all claimants hold approximately the same portion of each security is called

a. Subordinated Debt

b. Strip Financing

c. Secured Debt

d. Mezzanine Financing

e. Unsecured Debt.

118. Under which of the following conditions it would be cheaper to buy additional capacity in the financial markets than in the real asset market?

a. When q ratio is more than 1.

b. When q ratio is less than 1.

c. When q ratio is equal to 1.

d. All of the above.

e. None of the above.

119. Which of the following activities take(s) place as a first step in a LBO operation?

a. The organizing sponsor group buys all outstanding shares of the company or purchases all the assets of the company.

b. Raising the cash required for the buyout.

c. Devising a management incentive system.

d. Both (a) and (c) above.

e. Both (b) and (c) above.

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International Mergers and Restructuring

120. Which of the following mostly influences an international merger?

a. Growth.

b. Diversification.

c. Technology.

d. Exchange Rates.

e. Synergy.

121. When a firm that has developed a reputation for superior products in the domestic market plans for an international merger, on what does it want to leverage upon?

a. Diversification.

b. Political Stability.

c. Product Advantages.

d. Exchange Rates.

e. Technology.

122. In which of the following conditions can a company reduce its systematic risk by international diversification?

a. When foreign economy is perfectly correlated with the domestic economy.

b. When foreign economy is imperfectly correlated with the domestic economy.

c. When foreign economy is positively correlated with the domestic economy.

d. Both (a) and (c) above.

e. All of the above.

123. Which of the following is **not** a means of achieving international business goal?

a. Merger.

b. Joint Venture.

c. Licensing.

d. Import/Export.

e. None of the above.

124. Which of the following means of achieving international business goals involve(s) internalizing transactions using managerial coordination within the firm?

a. Merger.

b. Joint Venture.

c. Licensing.

d. Import/Export.

e. Both (b) and (d) above.

125. The risks of operating in a foreign environment can be reduced through

a. Incremental approach to enter a foreign market

b. Careful planning

c. Diversifying into markets which are imperfectly correlated with the domestic market

d. Both (b) and (c) above

e. All of the above.

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126. Which of the following is **not** a political stability consideration of a country?

a. Outright War.

b. Subsidies.

c. Tax Breaks.

d. Expropriation.

e. None of the above.

Share Repurchase and Exchanges

127. Which of the following activities refers to a corporation buying its own shares in the open market at the going price just as any other investor might buy the corporation's shares?

a. Tender Offer.

b. Negotiated Share Repurchase.

c. Open Market Share Repurchase.

d. Exchange Offer.

e. None of the above.

128. Which of the following are **not** assumptions of the basic stock repurchase model?

i. Market is efficient.

ii. There are no taxes and transaction costs.

iii. Offers are maximum limit offers.

iv. There is perfect competition in the securities market.

v. Investors can influence the outcome of a stock repurchase offer.

a. Both (i) and (v) above.

b. Both (ii) and (v) above.

c. Both (iii) and (v) above.

d. Only (i), (iii) and (iv) above.

e. Only (ii), (iii) and (iv) above.

129. In the basic share repurchase model equation $P_E N_E = P_0 N_0 - P_T (N_0 - N_E) + W$, P_E stands for

a. The preannouncement share price

b. The post-expiration share price

c. The tender price

d. The fraction of shares repurchased

e. The number of shares outstanding after share repurchase.

130. According to the basic stock repurchase model, offers are

a. Maximum limit offers

b. Any or all offers

c. Unlimited offers

d. Both (a) and (b) above

e. All of the above.

131. Which of the following hypotheses suggests that the share repurchase enables the stockholder to substitute a lower capital gains tax for a higher ordinary personal income tax rate on the cash received?

a. Information and Signaling Hypothesis.

b. Leverage Hypothesis.

c. Dividend or Personal Taxation Hypothesis.

d. Bondholder Expropriation Hypothesis.

e. Redistribution Hypothesis.

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132. Which of the following characteristics of an exchange offer **does/do not** result in positive returns to shareholders?

a. A decrease in leverage.

b. An increase in future cash flows.

c. Undervaluation of common stock in the market.

d. All of the above.

e. None of the above.

133. Which of the following terms explain the reasons for the share repurchases?

i. Dividend Hypothesis.

ii. Information and Signaling Hypothesis.

iii. Wealth transfers among shareholders.

iv. Defense against outside shareholders.

v. Leverage Hypothesis.

a. Both (iii) and (iv) above.

b. Only (i), (ii) and (v) above.

c. Only (ii), (iv) and (v) above.

d. Only (i), (ii), (iii) and (iv) above.

e. All of the above.

Corporate Control Mechanisms

134. Which of the following is **not** an internal control mechanism for corporate control?

a. Competition among managers.

b. Monitoring of large shareholders.

c. Control of the board of directors.

d. Proxy fight.

e. None of the above.

135. Corporate restructuring used to create two classes of common stock with the superior-vote stock concentrated in the hands of the management is called

a. Proxy Contests

b. Tender Offer

c. Dual-class Recapitalization

d. Leveraged Recapitalization

e. Supermajority Voting Rights.

136. Identify the **incorrect** statement.

a. In the market for corporate control, managers or team of managers compete for the rights to manage corporate resources.

b. The market for corporate control operates within the firm and outside the firm.

c. Transfer of control between management teams is accomplished only through internal control devices typified by the board of directors.

d. The control mechanism called upon at a particular instance depends on the ownership structure of the firm.

e. None of the above.

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137. Which of the following is **not** a/are feature(s) of proxy contest?

a. Proxy contest represents an aspect of importance of control and membership on the firm's board of directors.

b. Proxy contests are attempts by dissidents groups of shareholders to obtain board representation.

c. Proxy contest represents a restructuring activity where two classes of common stock are created with a superior-vote stock concentrated in the hands of the management.

d. Both (a) and (b) above.

e. None of the above.

138. Which of the following hypotheses as given by Morck, Shleifer and Vishny predicts a uniformly positive relationship between management ownership and market valuation?

a. Managerial Entrenchment Hypothesis.

b. Convergence of Interest Hypothesis.

c. Increased Debt Capacity Hypothesis.

d. Hubris Hypothesis.

e. Latent Debt Capacity Hypothesis.

139. Which of the following terms describes a contractual arrangement where stockholders retain cash flow rights to their shares while giving the right to vote those shares to another entity?

a. Standstill Agreement.

b. Supermajority Voting Rights.

c. Voting Plan.

d. Voting Trust.

e. Proxy Contests.

140. Which of the following contractual agreements requires a shareholder to refrain from acquiring additional stock, and to vote with the management over a specified period of time?

a. Standstill Agreement.

b. Supermajority Voting Rights.

c. Voting Plan.

d. Voting Trust.

e. Proxy Contests.

141. As per the Weisbach's study, which of the following drives the level of monitoring?

a. Composition of the board.

b. The number of large shareholders.

c. The number of outstanding shares.

d. Low cost internal transfer of control.

e. Internal control mechanisms.

142. Which of the following statements is **not true** for the Warner, Watts and Wruck study?

a. There is an inverse relation between the probability of a top management change and share returns.

b. Management should not be held responsible for factors outside its control.

c. The underlying monitoring mechanism is quite efficient.

d. The analytical procedure has no predictive ability unless the share performance is extremely good or bad.

e. It provides mechanisms for replacing inefficient managers.

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143. Which of the following statements is the denominator of the q ratio?

a. The replacement cost of firm's plant and inventories.

b. The book value of the firm's plant and inventories.

c. The market value of the firm's plant and inventories.

d. Estimated market values of preferred stock and debt.

e. The actual market value of the firm's stocks.

144. The model proposed by Stulz includes

a. Monitoring of management by large shareholders

b. The increase in the manager's share ownership which increases the alignment of interests of the shareholders with that of the manager's

c. Alignment of shareholders' interests and managers' entrenchment

d. Firms with insider ownership of 30 percent acquired in hostile takeover

e. Large blockholder managers resisting takeover attempts.

145. The "extra-merger premium hypothesis" involves

i. Any voting rights premium that is, the incremental value of superior stock over inferior vote stock must reflect differences in payoffs in future states of nature

ii. The possibility that a firm may become the target in a takeover attempt

iii. The stability of the controlling coalition of insider shareholders will impact the market value of noncontrol-block shares.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (i) and (iii) above.

Takeover Defenses

146. Which of the following are factors that make a firm vulnerable to a takeover?

i. A high stock price in relation to the replacement cost of assets or their earning power.

ii. A highly liquid balance sheet with large amounts of excess cash, a vulnerable securities portfolio, and significant unused debt capacity.

iii. Good cash flow relative to current stock prices.

iv. Relatively large stockholdings under the control of incumbent management.

a. Both (i) and (ii) above.

b. Both (i) and (iv) above.

c. Both (ii) and (iii) above.

d. Only (i), (ii) and (iii) above.

e. Only (ii), (iii) and (iv) above.

147. Leveraged recapitalization, a relatively new technique of financial restructuring, is also called the

a. Leveraged Buyout

b. Management Buyout

c. Management Buy-in

d. Leveraged Cash out

e. All of the above.

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148. Which of the following statements are **true** about the characteristics of leveraged cash out?

i. Leverage is increased.

ii. Insider equity ownership is increased.

iii. The firm becomes a privately held firm.

iv. Outside shareholders are very few i.e. a minority.

a. Both (i) and (ii) above.

b. Only (i), (ii) and (iii) above.

c. Only (i), (ii), and (iv) above.

d. Only (i), (iii), and (iv) above.

e. All of the above.

149. Which of the following terms refers to a provision in an employment contract that compensates managers for loss of their jobs under change of control of management?

a. Poison Pill.

b. Golden Parachute.

c. Shark Repellants.

d. Standstill Agreement.

e. None of the above.

150. Which of the following terms refers to the amendments made by the target corporation in its corporate charter to make it more difficult for a hostile acquirer to bring out a change in the managerial control of the target?

a. Poison Puts.

b. Poison Pills.

c. Golden Parachutes.

d. Shark Repellants.

e. Greenmail.

151. Which of the following is **not** a feature of a back-end rights plan?

a. Shareholders receive a rights dividend.

b. The back-end plans set a minimum takeover price for the firm.

c. At the trigger point, holders, excluding the acquirer, can exchange a right and a share of stock for senior securities or cash equal to a back-end price set by the board of directors of the issuing firm.

d. Shareholders also get the super majority voting rights at trigger point.

e. Back-end price is higher than the stock market price.

152. Which of the following statements are **not true** about poison puts?

i. It is the same as poison pill.

ii. It involves issuance of bonds that contain a put option exercisable only in the event that an unfriendly takeover occurs.

iii. It allows the holder to sell a particular security to another individual or firm during a certain time period and at a specific price.

iv. They enhance the ability of the board of directors to bargain for a better price.

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a. Both (i) and (iv) above.

b. Both (ii) and (iii) above.

c. Only (i), (ii), and (iii) above.

d. Only (i), (ii) and (iv) above.

e. Only (ii), (iii) and (iv) above.

153. Which of the following terms refers to the antitakeover provision where the corporation's charter dictates the number of voting shares needed to amend the corporate charter or to approve important issues such as mergers?

a. Fair Price Provision.

b. Supermajority Provision.

c. Poison Pill.

d. Dual Capitalization.

e. None of the above.

154. Which of the following statements are **false** about dual class recapitalization?

i. It is the restructuring of equity into two classes of stock with different voting rights.

ii. It gives greater voting power to a group of stockholders who might be sympathetic to the management's view.

iii. Management often increases its voting power directly by acquiring the stock with greater voting rights.

iv. It involves issuance of another class of stock that has superior voting rights to the current outstanding stock.

a. Only (i), (ii) and (iii) above.

b. Only (i), (ii) and (iv) above.

c. Only (i), (iii), and (iv) above.

d. Only (ii), (iii) and (iv) above.

e. None of the above.

155. Which of the following is **not** an active antitakeover amendment?

a. Greenmail.

b. Standstill Agreement.

c. White Squire.

d. Poison Pill.

e. Pac man Defense.

156. A target makes an offer to the raider in response to the raider's bid for the target. Which of the following antitakeover defenses refers to the above statement?

a. Greenmail.

b. Standstill Agreement.

c. Pac man Defense.

d. Just Say "No" Defense.

e. Share Repurchase.

157. Which of the following is **not** a preventive antitakeover defensive measure?

a. Golden Parachutes.

b. Poison Pills.

c. Corporate Charter Amendments.

d. Anti-greenmail Provisions.

e. Standstill Agreement.

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158. In a notation used by Comment and Jarrell, where the acquisition price is expressed as $P_B = (F \times P_T) + [(1 - F) \times P_E]$ what does P_T stand for?

a. Acquisition price of the takeover.

b. Offer price.

c. Post-offer market price.

d. Front-end price.

e. None of the above.

159. Which of the following statements are **true** about a two-tier offer?

i. The two-tier offer specifies the maximum number of shares to be accepted in the first tier.

ii. It does not announce the bidders plans with respect to the remaining shares.

iii. Purchase of shares is made conditional on the receipt of a minimum number of shares.

a. Both (i) and (ii) above.

b. Both (i) and (iii) above.

c. Both (ii) and (iii) above.

d. All of (i), (ii) and (iii) above.

e. None of the above.

160. In which of the following types of tender offers the maximum number of shares is **not** specified but none will be purchased if the conditions of the offer are not met?

a. Partial Offer.

b. Front-end Offer.

c. Back-end Offer.

d. Any or All Offer.

e. Two-tier Offer.

161. Which of the following is a defense mechanism against hostile takeover, which provides holders of securities special rights exercisable only after some time following the occurrence of a tender offer?

a. Poison Put.

b. Greenmail.

c. Anti-greenmail.

d. Poison Pill.

e. None of the above.

162. Which of the following types of poison pills is designed to discourage coercive two-tier tender offer or to avoid dilution by a majority shareholder?

a. Back-end Rights Plan.

b. Ownership Flip Over Plan.

c. Preferred Stock Plan.

d. Voting Plan.

e. Flip Over Plan.

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163. Which of the following statements is/are **true** regarding the poison pill defense?

i. Poison pill defense induce the bidder to negotiate with the target management and hence enables the board to secure a higher price for the firm than would otherwise be paid.

ii. Poison pill defense deters the accumulation of substantial block.

iii. Poison pill defense decreases the costs of acquiring a firm for merger or merely a controlling interest in the firm.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (i) and (iii) above.

164. Which of the following is **not** an objective of the various types of poison pill defense?

a. To reduce the conflict of interest between shareholders and managers in a change of control situations.

b. To avoid dilution by a majority shareholders.

c. To prevent a coercive two-tier tender offer.

d. To deter accumulation of a substantial block.

e. To deter formal mergers, substantial asset sales and self-dealing.

165. Which of the following is **not** a type of the poison pill defense?

a. Preferred Stock Plan.

b. Back-end Plan.

c. Flip Over Plan.

d. Front-end Loaded Plan.

e. Voting Plan.

166. Which of the following investment banks first developed the Leveraged Recapitalization?

a. Drexel Lambert.

b. Goldman Sachs.

c. Morgan Stanley.

d. UBS Warburg.

e. J P Morgan.

167. Compensation agreements given to most employees of the firm including lower level employees are called

a. Golden Parachutes

b. Silver Parachutes

c. Greenmail

d. Poison Pill

e. None of the above.

168. Which of the following theories states that shareholder benefits of antitakeover defenses outweigh management entrenchment motives and effects?

a. Free Cash Flow Hypothesis.

b. Shareholder Interest Hypothesis.

c. Managerial Efficiency Hypothesis.

d. Leverage Hypothesis.

e. Merger Wave Hypothesis.

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169. Which of the following is an antitakeover defense where target companies often try to get a court injunction, temporarily stopping the takeover attempt until the court has decided that the target's allegations are groundless?

a. Just Say "No" Defense.

b. Litigation.

c. Restructuring.

d. Recapitalization.

e. Pac man Defense.

170. Which of the following statements explains a "Saturday night special"?

a. Takeover defense to make the firm less attractive to unwanted acquirers.

b. A more acceptable merger partner sought out by the target of the hostile bidder.

c. A hostile tender offer with a short time for response.

d. Attempt by a dissident group of shareholders to gain representation on the firm's board of directors.

e. None of the above.

171. Which of the following hypotheses is a theory that antitakeover efforts are motivated by managers' self-interests in keeping their jobs rather than the best interests of shareholders?

a. Convergence of Interest Hypothesis.

b. Hubris Hypothesis.

c. Managerial Entrenchment Hypothesis.

d. Increased Debt Capacity Hypothesis.

e. Latent Debt Capacity Hypothesis.

172. Which of the following is a poison pill takeover defense in which target shareholders are issued a rights dividend exercisable if an acquirer obtains a triggering amount of target stock?

a. Flip Over Plan.

b. Back-end Rights Plan.

c. Preferred Stock Plan.

d. Voting Plans.

e. Ownership Flip-in Plans.

173. Which of the following statements is/are **false** about an ownership flip over plan?

a. It is a poison pill antitakeover defense.

b. Target stockholders are issued the rights to purchase target shares at a discount.

c. Target stockholders are issued the voting preferred stock.

d. Both (a) and (c) above.

e. Both (b) and (c) above.

174. Which of the following antitakeover amendments is useful to defend against two-tier offers that are not approved by the target's board?

a. Supermajority amendments.

b. Fair price amendments.

c. Classified boards.

d. Authorization of preferred stock.

e. None of the above.

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175. Which of the following antitakeover amendments specifies a requirement that a change of control must be approved by at least 67 to 90 percent of the shareholders?

a. Super majority amendments.

b. Fair price amendments.

c. Classified board.

d. Authorization of preferred stock.

e. Dual recapitalization.

176. A standstill agreement is made without the targeted repurchase deal because

i. The managers may make greenmail payments to protect themselves from competition.

ii. The large blockholder may not increase his ownership.

iii. The management can easily prohibit greenmail without legislation.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (ii) and (iii) above.

Management Guides for M&A Activity

177. Which of the following is **not** one of the five Drucker Commandments for successful acquisition?

a. The acquired must contribute something to the acquirer.

b. A common core of unity is required.

c. The acquirer must respect the business of the acquired company.

d. Within a year of acquisition, the acquiring company must be able to provide a top management to the acquired company.

e. Within a year of merger, managements in both companies should receive promotions across the entities.

178. Which of the following is **not** a/are significant determinant(s) of the merger and acquisition activity?

a. The rates of growth in real GNP of a country.

b. Relative costs of capital for individual firms.

c. Availability of alternative investment opportunities.

d. Both (a) and (b) above.

e. None of the above.

179. The key valuation parameters according to Rappaport are the

i. Sales Growth

ii. Operating Profit Margin

iii. Cost of Capital

iv. Fixed Capital Investment

v. Working Capital Investment.

a. Only (i), (ii) and (iii) above.

b. Only (i), (iii) and (iv) above.

c. Only (i), (iv) and (v) above.

d. Only (i), (ii), (iii) and (iv) above.

e. All of the above.

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180. Which of the following indicate(s) the long range strategic plans?

i. Consideration of capabilities, missions and environmental interaction from the point of view of the firm and the divisions.

ii. Emphasis on the particular goals and objectives.

iii. Recognition of the needs in relating to the firm's changing environment and constituencies effectively.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (i) and (iii) above.

181. What are the action(s) taken to close a prospective gap between the firm's objectives and its potential based on its present capabilities?

i. Decisions involving entrepreneurial judgments.

ii. Effective alignment of the firm with its environment and constituencies.

iii. Relating the outcomes to the needs of the firm.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. All of (i), (ii) and (iii) above.

182. Emphasizing on the broader orientation to effective alignment of a firm involve(s) which of the following?

a. Choosing products related to the needs or missions of the customer, providing large markets.

b. Focusing on technological bottlenecks.

c. Focusing on technological capabilities.

d. Economic criteria including attractive growth prospects and appropriate stability.

e. All of (a), (b), (c) and (d) above.

183. Which of the following is/are **true** with respect to the size objectives of the firm?

a. Size objectives are expressed in terms of sales, total assets and earnings per share.

b. Size objectives may be expressed in terms of critical mass.

c. These are established to ensure that the firm uses the variable factors effectively.

d. It aims in attaining a favorable price/ earnings multiple.

e. Both (b) and (c) above.

184. The quantification of goal facilitates which of the following?

a. Ease in accounting.

b. Reduced instability.

c. Detection of errors in the procedures followed.

d. Comparison with forecasts of the prospects.

e. Both (a) and (b) above.

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Models of the Takeover Process

185. If v = value of the share with improvement due to takeover, p = offer price and q = value of the share without improvement and each shareholder believes that the tender will fail, then under which of the following conditions will a shareholder tender his or her shares?

a. v > p

b. p > q

c. p > 0

d. p = 0

e. p < 0.

186. Which of the following hypotheses states that the winner of the sealed-bid common value auction tends to be the one who most overestimates the **true** value of the auctioned object?

a. Kick in the pants hypothesis.

b. Sitting on a gold mine hypothesis.

c. Extra merger premium hypothesis.

d. Winner's curse hypothesis.

e. Harassment hypothesis.

187. Mega Enterprises and Gigantic Enterprises quoted bids of 120 and 100 respectively for the shares of Lara Inc. What is the value of Mega Enterprises if it is being in the pool as per the Jegadeesh and Chowdhry model when it has already acquired 20% shares from the open market? [P (B) = 80.45%]

a. 19

b. 22

c. 25

d. 31

e. 33.

188. A free-rider problem is prominent in which of the following types of firm?

a. Merger of a horizontal type.

b. Merger of a vertical type.

c. Diffusely held corporation.

d. Reverse merger.

e. All of (a), (b), (c) and (d) above.

189. A free-rider problem can be avoided by which of the following ways?

a. Announcement of dilution of the value of non-tendered shares after the takeover.

b. Keeping the exchange rate of the shares too low.

c. Announcing a two-tier offer.

d. Reducing the incentives of the shareholders.

e. Both (a) and (c) above.

190. As per the HT Model, in the separating equilibrium,

a. A low-gain bidder offers a low bid

b. A high-gain bidder offers a high bid

c. A low-gain bidder bids high

d. A high-gain bidder does not bother about the rejection

e. Both (a) and (b) above.

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191. This model of takeover explored the implications of an increase in the holdings of the large shareholders. Which model is the statement talking about?

a. HT Model.

b. Shleifer and Vishny Model.

c. Jegadeesh and Chowdhry Model.

d. Fishman Model.

e. Hansen Model.

192. Mr. L, the largest shareholder of A Ltd., owns $\alpha < 0.5$ of the firm, and invests in monitoring and research and finds the improvements to the tune of Z. Then his bidding for how many shares would give him the control of A Ltd.?

a. $(0.5 - \alpha)$.

b. $(0.5 - Z)$.

c. $(Z - \alpha)$.

d. $(Z - 0.5\alpha)$.

e. $(0.5Z - \alpha)$.

193. Which of the following statements is **true** for the Shleifer and Vishny Model?

a. The value of the firm is Z, where Z is the future improvements.

b. The increase in the legal and administrative costs decreases the takeover premium.

c. The stock repurchase increases the stock price as it increases α.

d. The small shareholders accept a bid equal to α.

e. None of the above.

194. Hirshleifer and Titman in their model examine

a. The situation of post-takeover dilution

b. The pre-takeover costs on research and monitoring

c. The situation that reduces the probability of success of the bid by way of insider information

d. Both (a) and (b) above

e. Both (b) and (c) above.

195. The Jegadeesh and Chowdhry model focuses on which of the following?

a. The synergy known to the large shareholders.

b. The contingent cost defenses by the management.

c. The likely value of the improvement.

d. The bidder's strategy for pretended offer acquisition of target shares.

e. The post-takeover dilution for avoiding the free-rider problem.

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Part I: Answers to Questions on Basic Concepts

Overview

1. *(c)* Divestiture or the sale of a portion of the firm to an outside third party is a process of contraction and hence cannot be a part of expansion.

2. *(b)* Distribution of shares to a portion of existing shareholders in a subsidiary in exchange for the parent company stock takes place in a split off while the rest are all activities associated with spin-off.

3. *(a)* In an equity carve out, new shares of equity are sold to the outsiders which give them ownership of a previously existing firm.

4. *(b)* Antitakeover Amendments are changes in the company by laws to make the acquisition of a company more difficult or more expensive.

5. *(d)* Divestiture involves the sale of a portion of the firm to an outside third party. Cash or equivalent consideration is received by the divesting firm. Distribution of shares to the existing shareholders of the parent company is spin-off and sale of a portion of the firm through an equity offering is equity carve out.

6. *(e)* Proxy contest does not involve any change in the ownership structure. In a proxy contest a dissident group of shareholders seeks to obtain representation on the firm's board of directors. It involves change in corporate control.

7. *(a)* In a going private transaction, the entire equity interest in a previously public corporation is purchased by a small group of investors. A MBO is a special type of LBO in which the management of a publicly held company decides to take it private.

8. *(a)* Standstill agreement is a written agreement and not an oral agreement.

9. *(b)* Merger refers to a transaction that forms one economic unit from two or more previous units.

10. *(b)* The period between 1895 and 1904 was one period of rapid expansion and consisted mainly of horizontal mergers.

11. *(a)* The 1895-1904 merger movement at the turn of the century accompanied major changes in economic infrastructure and production technologies like the completion of transcontinental railroad system, the advent of electricity and the increased use of coal.

12. *(d)* The fourth merger wave between 1981-1989 witnessed the use of debt and thereby the growth of junk bonds.

13. *(a)* A quasi rent is the excess return to an asset above the return needed to maintain an asset's current service flow and is not the only return needed to maintain its current service flow.

14. *(e)* All the given alternatives form information which is collectively known as organization capital.

15. *(e)* Investment opportunities can take three forms – internal investments, external investments and restructuring. Internal investments are the continuation or expansion of existing projects or the addition of new projects internally. External investments are in the form of horizontal, vertical, or conglomerate mergers and restructuring refers to liquidating projects in some areas and redirecting assets to the other existing areas.

Merger Types and Characteristics

16. *(b)* Vertical mergers occur between firms in different stages of production operation.

17. *(b)* Financial conglomerates provide flow of funds to each segment of their operations, exercise control, and are the ultimate financial risk takers but do no play any role in operating decisions. They do not provide staff expertise and staff services.

18. *(e)* Product extension merger is a type of conglomerate merger which broadens the product lines of the firms. These are mergers between firms in related business activities and may also be called concentric mergers. Market extension mergers widen the geographic area of

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the operation of a firm.

19. *(b)* If the activities of two firms brought together are so related that there is carry-over of specific management functions like research, finance, marketing, etc., the merger is termed concentric and not conglomerate.

20. *(c)* In merger context, synergy translates into the ability of a business combination to be more profitable than the sum of profits of individual firms that were combined. It may be in the form of revenue enhancement or cost reduction.

21. *(c)* In the introductory stage, new or small firms become targets for horizontal or conglomerate mergers initiated by larger firms in either mature or declining industries. The managerial and financial resources of the individual companies are pooled in a merger.

22. *(a)* Organizational learning is defined as the improvement in the capabilities of managers and other employees through experience. It includes managerial learning and non-managerial labor learning.

23. *(e)* The motive of a merger for increasing its net present value of cash flows makes economic sense.

24. *(b)* The merger intimation should not be passed on to the Supreme Court.

25. *(c)* The Companies Act lays down that the scheme of amalgamation should be approved by at least 75% (in value) of shareholders, in each class, who vote either in person or by proxy.

Principles of Valuation

26. *(b)* The net present value is the discounted cash flow approach to capital budgeting. All cash flows are discounted to the present value using the required rate of return i.e., the cost of capital.

27. *(e)* Replacement cost approach is one of the methods of valuation where the value of the company is based on the replacement costs of its assets and is not a method of evaluation of a project under capital budgeting.

28. *(c)* The major advantage of the net present value method is that it satisfies the Value Additivity Principle (VAP). The VAP enables the managers to consider each project independently.

29. *(a)* The NPV method satisfies the Value Additivity Principle (VAP), i.e., it permits the managers to consider each project independently of others. Moreover, NPV from each project represents the amount which the investments in that project add to the value of the firm. Thus, the NPV is considered as the basis for the increase in the value of the firm.

30. *(b)* Depreciation is added back to net income to calculate the cash flow from operations on a gross basis.

31. *(a)* FCF is used for interest payments on post-tax basis.

32. *(d)* The firm is expected to stabilize and reach a steady state at the end of the explicit forecast period.

33. *(e)* The cost of capital is based on market value because book value represents the financial legacy rather than a current perspective.

34. *(d)* NPV = 30,000 [$PVIFA_{(12\ \%,\ 10\ yrs)}$] – 1,00,000

= 30,000 x 5.6502 – 1,00,000

= 69,506.

35. *(b)* The internal rate of return assumes reinvestment at the IRR rate.

36. *(d)* IRR is the discount rate which makes the NPV equal to zero.

0 = 24,000 [$PVIFA_{(IRR,\ 15\ yrs)}$] – 1,20,000

$PVIFA_{(IRR,\ 15\ yrs)}$ = Rs.1,20,000/24,000 = 5,000 = $PVIFA_{(18\%,\ 15\ yrs)}$.

37. *(c)* As per the zero growth valuation model V_0 = FCFF/k

V_0 = 1,00,000/0.12 = 8.3 lakh.

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38. ***(a)*** The value of the firm with supernormal growth followed by no growth is given by the formula

$$V_0 = X_0\left(1-T\right)\left(1-b_s\right)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

39. ***(b)*** According to the dividend discount model, the equity valuation in dividend form, for a firm having temporary supernormal growth, followed by constant growth is done by using the formula

$$S_0 = \sum_{t=1}^{n}\frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1-b_c)(1+g_s)^{n+1}}{(k_e-g_c)(1+k_e)^n}$$

40. ***(e)*** As per the constant growth valuation model V_0 = $(FCFF)_1 / k - g$

Where, $(FCFF)_1 = FCFF_0(1+g)$

V_0 = 2,00,000 x 1.1 / (0.15 – 0.10) = Rs.44 lakh.

41. ***(b)*** The equation $V_0 = \frac{X_0(1-T)(1-b)(1+g)}{k-g}$

represents the constant growth valuation model under the free cash flow basis for firm valuation.

42. ***(b)*** The comparable company approach is also known as the relative valuation as the value of any firm is derived from the value of comparable firms, based on a set of common variables like earnings, sales, cash flows, book value, etc.

43. ***(a)*** The liquidation value provides an estimate of the minimum value of the firm.

44. ***(c)*** As per revaluation of asset if replacement value > economic value > realization value, then the loss on deprivation of the asset will be the economic value of the asset.

45. ***(e)*** The cost of capital is the weighed average of the cost of equity and the cost of debt. Hence, statements (ii) and (iii) are false.

46. ***(e)*** All the given alternatives are different methods employed in the estimation of the cost of capital.

47. ***(c)*** The CAPM model is represented by the equation $k_e = R_f + [R_m - R_f]\beta$

Where, R_f = risk-free rate

R_m = market rate of return

β = the systematic risk of the individual asset

k_e = cost of equity.

48. ***(c)*** The weighed average cost of capital is given by the formula

$k = k_b(1-T)(B/V) + k_e(S/V) + k_p(P/V)$

Where, B = market value of debt

S = market value of shareholders equity

P = market value of preference capital

V = total market value of the firm (B+S+P)

k_b = cost of debt

k_e = cost of equity capital

k_p = cost of preference capital.

49. ***(b)*** Average investors' yield is what investors historically have required as their return on investment in a company or industry. It can be calculated on market basis or on accounting returns.

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50. *(d)* CAPM equation $k_e = R_f + [R_m - R_f] \beta$

$= 0.08 + (0.12 - 0.08)\ 1.5$

$= 0.08 + 0.06 = 0.14$ or 14%

51. *(c)* The problem deals with valuing a company using the P/E approach, or the same or comparable industries approach.

Price/Share = EPS x P/E

= 30 x 20 = Rs.600

Market value = 1,00,000 x 600 = Rs.6,00,00,000.

52. *(d)* The exchange ratio is the number of acquirer's shares that are offered for each share of the target.

Exchange ratio = Offer price/Share price of acquirer = Rs.90/Rs.150 = 0.60 shares.

53. *(b)* Purchase price premium = Offer price for target company/Target company market price per share

= 80/60 = 1.333 or 33.33%

54. *(d)* The replacement cost approach states that the assets of the business are worth what it would cost to replace them. The approach is mostly applicable to businesses that have substantial amounts of tangible assets for which the actual cost of replacement is easily determined.

55. *(d)* As goodwill is an intangible asset, it is not deductible for tax purposes.

56. *(d)* Adjusted book value approach values the assets and liabilities at their fair market value.

57. *(d)* P/E method involves valuing the firm based on its earnings of the first year after the explicit forecast period. Replacement cost method determines the continuing value based on the replacement cost of its assets.

58. *(d)* In the equation $NAV = [V_{AB} - (V_A + V_B)] - (P + E)$, $[V_{AB} - (V_A + V_B)]$ represents synergistic effect. The equation implies that the synergistic effect must be greater than the sum of P+E to justify going forward with the merger.

Theories of Mergers and Tender Offers

59. *(c)* Efficiency theories generally involve improving the performance of the present management or achieving a synergy after a merger. They hold that mergers have potential for social benefits.

60. *(d)* When a firm has an efficient management team whose capacity is in excess of its current managerial input demand, the firm may be able to utilize the extra managerial resources by acquiring a firm that is inefficiently managed due to shortages of such resources.

61. *(a)* In a differential efficiency theory, the acquiring firm's management seeks to complement the management of the acquired firm since it has experience in that particular line of business activity of the acquired firm. Thus, it is more likely to be a basis for horizontal mergers. In contrast, the inefficient management theory could be the basis for conglomerate mergers.

62. *(a)* The inefficient management theory suggests that target management is so inept that virtually any management could do better, and hence can lead to an acquisition.

63. *(e)* Combining two or more entities results in gains in revenues or cost reductions because of complementarities or economies of scale or scope.

64. *(c)* A firm in declining industry will produce large cash flows since there are few attractive investment opportunities and a firm in the growth industry has more investment opportunities than the funds available. Hence, a merger between such firms will result in a financial synergy.

65. *(d)* A strategic approach to mergers implies all the given alternatives.

66. *(b)* An agency problem arises when managers own only a fraction of the ownership shares of the firm. They tend to be indifferent because the majority owners bear most of the costs.

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67. *(c)* Roll suggests that the takeovers are a result of the hubris hypothesis on part of the buyers. They presume that their valuations are right though the market valuation may be otherwise. The pride of the management makes them believe that their valuation is superior to the market. Thus, the acquiring company tends to overpay for the target because of over-optimism in evaluating potential synergies.

68. *(c)* When the market value of assets is less than their replacement costs there is undervaluation which leads to an acquisition. Firms can acquire assets for expansion more cheaply by buying the stock of existing firms than by buying or building the assets when the target's stock price is below the replacement costs of its assets.

69. *(b)* The signaling theory is a variation to the information hypothesis. It states that certain actions convey other significant forms of information. A firm receiving a tender offer may give a signal to the market that it possesses extra value which was not recognized by the market earlier. It may also signal that the future cash flows of the firm are likely to rise. When the acquirer uses stock to buy a firm it may signal that the target firm stock of the acquirer is overvalued. When a firm buys back its own shares, the market may take it as a signal that the management has information that its shares are undervalued and there are growth opportunities for the firm.

70. *(c)* $H = 5\,(10)^2 + 50\,(1)^2 = 550$.

71. *(a)* The theory of strategic alignment to changing environments say that mergers take place in response to environmental changes. External acquisitions of needed capabilities allow firms to adapt more quickly and with less risk than developing capabilities internally.

72. *(c)* Reverse synergy implies that two firms are better off individually than as a combination. This will lead to a sell-off or a divestiture and cannot be a motive for merger.

73. *(b)* Firms diversify into different industries, to increase the probability that the organization and reputation capital of the firm will be preserved by transfer of the employees to another line of business owned by the firm in the event its initial industry declines.

74. *(c)* Agency problems may result from a conflict of interest between managers and shareholders or between shareholders and debt holders.

75. *(c)* Managerialism views takeovers as a manifestation of the agency problems rather than its solution. It suggests that self-serving managers make ill conceived combinations solely to increase the firm size and their own compensation.

76. *(e)* Tax effects, though do not play an important role in mergers, do provide certain benefits. All the given alternatives are tax motivations for mergers.

77. *(c)* The acquired firm can inherit the desirable tax attributes of the acquirer if it fulfills the condition of continuity of interest. Two conditions need to be met for achieving the continuity of interest – the majority of the target company is to be acquired in exchange for the stock of the acquiring firm and the acquisition should be backed by legitimate business purposes.

Sell-offs and Divestitures

78. *(b)* A phenomenon where the total performance of the combined firm will be greater than the sum of individual parts is called synergy and in a sell-off there is no possibility of synergy.

79. *(c)* An equity carve out is the Initial Public Offering (IPO) of some portion of the common stock of a wholly owned subsidiary and hence is also referred to as "split off IPO".

80. *(c)* While Mergers and Acquisitions lead to synergy, divestures can result in reverse synergy. A particular business may be more valuable to someone for generating cash flows and that someone will be paying a higher price for the business than its present value. Divestiture is also taken to enable a company to make certain strategic changes. The competitive advantage that a company has may change over time due to changing market conditions, and as a result, a company may have to divest a particular business. In some cases, the past diversification programs of a company may have lost value, making it necessary for the company to refocus its core competencies. A divestiture helps a company to refocus on its core competencies.

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81. *(d)* Liquidation is a process of selling the whole of a firm in parts.

82. *(e)* A recent survey done by A.F. Furguson reveals these motives for divestitures in India for instance, the case of "Sale of TOMCO by Tatas" is a classic example of focus on core business for the divestiture firm. Again, "Sale of ITC classic by ITC", for getting rid of unprofitable business. Also, "Sale of Lupin Agro by the Lupin Group" is an excellent example for need for funds for other activities.

83. *(c)* An equity carve out is the initial public offering of some portion of the common stock of a wholly owned subsidiary. The parent generally sells only a minority interest in the subsidiary and maintains control over the subsidiary assets and operations.

84. *(a)* Bust-up takeovers reflect the judgment that the sale of individual parts of some firms could realize greater values than the combination of the parts in one corporate enterprise.

85. *(d)* The information hypothesis holds that the true value of subsidiary assets is hidden by the complexity of the business structure in which they are rooted. It explains the positive returns found in spin-offs, divestitures and equity carve outs.

86. *(c)* As per the managerial efficiency hypothesis the preference for the pure play securities cannot be attributed to the lack of confidence in the market's ability to value complex organizations rather it is due to the perceived inability of managers to manage them effectively.

Methods of Payment and Leverage

87. *(a)* Junk bonds are low grade high yield bonds.

88. *(c)* Drexel Burnham Lambert was one of the first investment banks to underwrite new issue junk bonds and was unique in its efforts to promote the junk bond market as an attractive investment alternative.

89. *(c)* Junk bonds, a financial innovation of the 1980s, represent a response to the changed economic and financial environment. The new factors include increased external financing by business firms, heightened interest rate volatility, deregulation and increased competition among financial institutions and an increase in the pace of industrial restructuring.

90. *(b)* Signaling hypothesis suggests that using cash is a positive signal that the future cash flows will be large enough to exploit investment opportunities or the takeover will generate large cash flows, whereas using stock suggests that the bidder may not have sufficient internal financing.

91. *(c)* Junk bonds are high yield bonds, either rated below the investment grade or unrated. Standard & Poor's rates junk bonds at below BBB–.

Joint Ventures

92. *(b)* Mergers result in reduction in the number of firms, whereas joint ventures increase the number of firms.

93. *(a)* Joint venture represents a relatively new thrust by each participant, so in recent years it is also termed as "strategic alliance".

94. *(e)* The basis of this union can include several other factors such as:

a. Pooling of complementary resources

b. Access to raw materials

c. Access to new markets

d. Diversification of risks

e. Economies of scale

f. Cost reduction

g. Purchaser-supplier relationships

h. Joint manufacturing

i. Tax shelter.

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95. *(d)* In a joint venture, two or more firms join their hands to form a separate, independent organization for strategic purposes. Such partnerships are typically focused on a specific market objective. As part of the joint venture agreement, ownership, operational responsibilities, and financial rewards and risks are allocated to each participant. Each partner in the joint venture retains its own corporate identity and independence. Joint ventures may run from a few months to a few years, and often involve a cross-border relationship called as "cross-border joint ventures".

96. *(e)* According to the Indian Contract law, joint ventures are characterized by all the given features.

97. *(b)* One of the motives for joint venture is the learning experience that may be achieved. Successive integration strategy uses joint venturing as a way of learning about prospective merger partners for full merger or acquisition at a later date.

98. *(a)* Joint ventures are also used as an element of long run strategic planning. The spider's web strategy is used to provide countervailing power among rivals in a product market and among rivals for a scarce resource. Thus, a small firm in a highly concentrated industry can negotiate joint ventures with several of the industry's dominant firms to form a self-protective network of counterbalancing forces.

99. *(c)* Successive integration strategy uses joint venture as a way of learning about prospective merger partners to a full merger and acquisition.

ESOPs and MLPs

100. *(e)* There are four main kinds of ESOPs: leveraged, leveragable, non-leveraged, and tax credit.

101. *(c)* A leveraged ESOP is an employee stock ownership plan in which the ESOP borrows funds to purchase employer securities. The employer then makes tax-deductible contributions to the ESOP sufficient to cover both principal repayment and interest on the loan.

102. *(d)* In a defined benefit plan, an employer agrees to pay specific benefits upon retirement. According to a pre-set formula, these plans specify the amounts that participants receive during retirement.

103. *(e)* ESOPs represent one among a number of restructuring activities and are useful in all the given activities.

104. *(d)* In a stock bonus plan the firm contributes a specified number of shares of its common stock into the plan annually. In profit sharing plan and money purchase plan the firm pays cash into the plan.

105. *(d)* The MLP is a new organizational form which not only offers investors the structure and tax attributes of more traditional partnerships, but also offers investors liquidity via an organized secondary market for trading of partnership interests.

106. *(d)* In order to offer interests in a privately held company to public for raising finance, the assets of the existing entity are transferred to a start-up master limited partnership.

107. *(a)* Roll-out MLPs are formed by a corporation's contribution of operating assets in exchange for general and limited partnership interests in the MLP, followed by a public offering of limited partnership interests by the corporation of the MLP, or both.

Going Private and Leveraged Buyouts

108. *(e)* Leveraged buyout is the purchase of a company by a small group of investors, financed largely by debt.

109. *(c)* Management buyout is a going private transaction led by the incumbent managers of the formerly public firm.

110. *(b)* In a stock purchase format, the target shareholders simply sell their stock and all interests in the target corporation to the buying group and then the two firms are merged.

111. *(c)* Secured debt, which is sometimes called asset-based lending, consists of loans secured

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by liens on particular assets of the company.

112. ***(b)*** Subordinated debt issued in connection with leveraged buyouts is mezzanine financing. The term mezzanine money is often applied to subordinated debt financing because it has debt and equity characteristics. Although it is clearly debt, it is like equity as lenders typically receive warrants that may be converted into equity in the target.

113. ***(c)*** The mechanism of taking a company private through LBO in order to convert it into a public company through IPO at a later date (presummably to make it a better acceptable proposition for subscription) is called a reverse LBO.

114. ***(e)*** All the given alternatives are sources of gains in a LBO transaction.

115. ***(c)*** Free rider problem is the problem where atomistic shareholder reasons that its decision has no impact on the outcome of the tender offer and refrains from tendering to free-ride on the value increase resulting from the merger, thus causing the bid to fail.

116. ***(c)*** A firm involved in an LBO transaction faces business risk i.e., the risk that the firm will not generate sufficient earnings to meet the interest payments and other current obligations of the firm and interest rate risk i.e., the risk that interest rates will rise, increasing the firms current obligations.

117. ***(b)*** Strip financing is a type of financing, often used in Leveraged buyouts in which all claimants hold approximately the same portion of each security (except for management incentive shares and the most senior bank debt).

118. ***(b)*** The q ratio is the ratio of the market value of a firm to the replacement cost of its assets. When this ratio is less than one, it is cheaper to buy the capacity in financial markets than in real assets markets.

119. ***(e)*** The first stage of an LBO operation consists of raising the cash required for the buyout and devising a management incentive system. Buying of all outstanding shares of the company or purchasing all assets of the company by the organizing group takes place in the second stage of the LBO operation.

International Mergers and Restructuring

120. ***(d)*** The relative strength or weakness of a domestic versus foreign currency can impact the effective price paid for an acquisition, its financing, production costs of running the acquired firm, etc. Hence, the foreign exchange rates have larger impact on international mergers.

121. ***(c)*** A firm which has a product advantage in the domestic market may find it advantageous to diverse into the international market as well. Hence, it plans for a international merger.

122. ***(b)*** Merging internationally reduces the earnings risk inherent in being dependent on the health of a single domestic economy. Hence, to the extent foreign economy is imperfectly correlated with the domestic economy, the systematic risk of a company as a whole is reduced by international diversification.

123. ***(e)*** All the given alternatives are different ways of spreading business in the international market and achieving international business goals.

124. ***(a)*** Merger involves formation of a new company and hence the transactions are internalized using managerial coordination within the firm, whereas in all the other alternatives, transactions are done across the markets.

125. ***(e)*** Although the risks of operating in a foreign market are greater, they can be reduced through careful planning, by an incremental approach to entering a foreign market. Further, the systematic risk of the company as a whole may be reduced by international diversification.

126. ***(e)*** All the given alternatives are political stability considerations for a country.

Share Repurchase and Exchanges

127. ***(c)*** Open market share repurchase refers to the corporation buying its own shares on the open market at the going price just as any other investor might buy the corporation's shares, as opposed to a tender offer for share repurchase or a negotiated repurchase.

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128. *(b)* The basic stock repurchase model assumes that there is perfect competition in the securities market, which implies that individual investors are price takers and cannot influence the outcome of a stock repurchase offer. Investors seek to maximize the value of their wealth after taking into account taxes and transaction costs.

129. *(b)* The basic share repurchase model is given as

$P_E N_E = P_0 N_0 - P_T (N_0 - N_E) + W$

Where,

P_0 = The preannouncement share price

P_T = The tender price

P_E = The post-expiration share price

N_0 = The preannouncement number of shares outstanding

N_E = The number of shares outstanding after share repurchase

W = The shareholder wealth-effect caused by the share repurchase.

130. *(a)* The basic stock repurchase model assumes that offers are maximum limit offers. It means that if the offer is undersubscribed, the firm will buy all shares tendered. But if the offer is oversubscribed, the company will buy all shares tendered or will allocate shares on a pro rata basis.

131. *(c)* Sometimes, cash received by a shareholder as a result of a stock repurchase was taxable only if the repurchase price exceeds the shareholder's acquisition price and has a preferential lower capital gains tax rate. It thus explains the motive behind share repurchases.

132. *(a)* By increasing the leverage, the management signals that it believes cash flows will be significantly higher in the future to cover higher interest payments. Hence, increase in the leverage rather than its decrease would result in positive returns to shareholders.

133. *(e)* All the given alternatives are theories behind share repurchases which explain the reasons behind share repurchase offers.

Corporate Control Mechanisms

134. *(d)* Proxy fights are attempts made by dissident groups of shareholders to obtain board representation. They are external control mechanisms for corporate control.

135. *(c)* Corporate restructuring used to create two classes of common stock with the superior-vote stock concentrated in the hands of the management is called dual class recapitalization. They can be used to consolidate the control on the corporation by insiders, protecting them from displacement by a hostile takeover.

136. *(c)* Transfer of control between management teams are accomplished not only through internal control devices typified by the board of directors but also through external control mechanisms such as proxy contests, hostile takeovers, etc.

137. *(c)* A corporate restructuring activity where two classes of common stock are created with a superior vote stock concentrated in the hands of the management is a feature of Dual Class Recapitalization.

138. *(b)* The convergence of interest hypothesis given by Morck, Shleifer and Vishny predicts a uniformly positive relationship between management ownership and market valuation of the firm's assets.

139. *(d)* Voting trust is a device used by shareholders to retain the cash flow rights to their shares while giving the right to vote those shares to another entity.

140. *(a)* A standstill agreement is a voluntary contract by a large shareholder not to make further investments in the target company for a specified period of time.

141. *(a)* Increased shareholdings of the CEO would reduce the probability of his resignation. Moreover, the share ownership by non-controlling directors may not have any explanatory power, in addition to board composition. Hence, the board composition is said to be driving the level of monitoring.

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142. *(c)* The results of the study conducted by Warner, Watts and Wruck indicate that unless the share performance is extremely good or bad, their analytical procedure has no predictive ability. This leads the group to question the strengths of the underlying monitoring mechanism.

143. *(a)* The denominator of the q ratio is the replacement cost of the firm's plant and inventories, whereas the numerator is the sum of the actual market value of the firm's common stock and estimated market values of preferred stock and debt.

144. *(e)* Stulz proposes a model wherein large blockholder managers resist takeover attempts and thereby may cause the takeover premium to be higher.

145. *(b)* Megginson propounded three hypotheses for entailing rights. The "extra merger premium hypothesis" states that there is a possibility of the firm becoming the target in a takeover attempt and a higher price being paid for a superior voting right share.

Takeover Defenses

146. *(b)* (i) and (iv) do not make a firm an attractive investment opportunity. Rather a low stock price relation to replacement cost of assets or their potential earning power and a relatively small stockholdings under the control of the present management will lead to a takeover.

147. *(d)* A leveraged recapitalization is a defensive reorganization, where outside shareholders receive a large one time cash dividend and insiders and employees receive new shares of stock instead. It is also called the leveraged cash out.

148. *(a)* In leveraged cash outs, the firm remains publicly traded and the outside share ownership still represents a majority, whereas leverage and insider equity ownership are increased.

149. *(b)* Golden parachutes are financial defensive measures which give a provision calling for a lump sum payment over a specified period at full or partial rates of normal consumption.

150. *(d)* The amendments made by the target corporation in its corporate charter to make it more difficult for a hostile acquirer to bring out a change in managerial control of the target are called corporate charter amendments or antitakeover amendments or shark repellants.

151. *(d)* Shareholders get the super majority voting rights at trigger point only in the case of voting plans and not in back-end plans.

152. *(a)* Poison puts are different from poison pills. Poison pills enhance the ability of the board of directors to bargain for a better price.

153. *(b)* The supermajority provision provides for a higher majority vote to approve a merger. It is used as a charter antitakeover amendment.

154. *(e)* Dual capitalization is a defense mechanism used against a hostile takeover bid, according to which the Board of Directors are authorized to create a new class of securities with special voting rights. This voting power is given to a group of stockholders who are friendly to the management. A typical dual capitalization involves the issuance of another stock that has superior voting rights to all the current outstanding stockholders. The stockholders are then given the right to exchange this stock for ordinary stock. The stockholders prefer to exchange the super voting stock to the ordinary stock because the former usually lack marketability and also fetch low dividends. Management retains the special voting stock. This results in the management increasing its voting control of the corporation.

155. *(d)* Poison pill is a preventive antitakeover amendment, which is designed to reduce the likelihood of a hostile takeover, whereas all the others are active measures, which are employed after a hostile bid.

156. *(c)* The Pac man defense is named after a popular video game in which characters try to eat each other before they are eaten themselves. It occurs when the target makes an offer to the raider in response to the raider's bid for the target.

157. *(e)* Standstill agreement is an active antitakeover amendment where the target corporation reaches a contractual agreement with a potential acquirer whereby the acquirer agrees not to increase its holdings in the target during a particular period. It is employed after a hostile bid.

158. *(b)* In the expression $P_B = (F \times P_T) + [(1–F) \times P_E]$

P_B = Acquisition price of the takeover

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P_T = Offer price (i.e. the front-end price)

P_E = Post offer market price of the remaining shares

F = Fraction of shares purchased in the front-end offer.

Here, the acquisition price is a weighted average of the front-end and back-end values, using the fraction of shares receiving each price as the weights.

159. *(b)* In a two-tier offer, the bidder offers a first-tier price for a specified maximum number of shares that it would accept and announces at the same time its intention to acquire in a follow-up merger the remaining shares at a second-tier price. Purchase of shares is made conditional on the receipt of a minimum number of shares sufficient to guarantee the voting control of the target firm.

160. *(e)* Two tiered tender offer is sometimes also referred to as the front end loaded tender offer. The first tier price is always more than the second tier price. This method is designed to put pressure on those shareholders who are worried that they might get lesser compensation in the second tier, if they do not tender the shares in the first tier. In most of the cases cash is offered in the first tier and non-cash compensation like the debentures or securities whose market value is less than the first tier price is offered in the second tier. Acquirers or bidders who do not have access to large amounts of capital choose the two tiered offer. The limited capital is used to pay cash in the first tier and securities are offered for the second tier.

161. *(d)* Poison pills are shares issued by a firm to its shareholders to make the firm less valuable in the eyes of a hostile bidder. These shares have no value till the happening of a triggering event (acquisition of certain percentage of the firm's voting stock by the bidder). There are generally two triggering events first for issuing the rights and second for exercising them. There are basically two types of poison pills flip-over and flip-in.

162. *(c)* In a preferred stock plan, the preferred stock can be converted into voting securities of the acquirer with a total market value of not less than the redemption value. The tender offer for the preferred stock is likely to fail because holders of the preferred stock have no incentives to tender their shares as they are guaranteed to receive the highest price paid by the bidder.

163. *(d)* Poison pill defense increases the costs of acquiring a firm for merger or merely a controlling interest in the firm and hence it makes the firm unattractive for an acquirer. It is used as an antitakeover defense.

164. *(a)* A golden parachute is used to reduce the conflict of interest between various shareholders and managers in a change of control situations. All the others are objectives of a poison pill defense.

165. *(d)* Front-ended loading is referred to the tender offer where the offer price is greater than the price of any un-purchased shares.

166. *(b)* Goldman Sachs first developed the new technique of financing – Leveraged Recapitalization for Multimedia in 1985.

167. *(b)* Silver parachutes are applied broadly. They are separate agreements of separation that cover far more employees than covered by Golden Parachutes.

168. *(b)* The shareholder interest hypothesis also known as the convergence of interest hypothesis suggests that the wealth of the shareholders rises when the management takes actions to prevent changes in control. This resistance for the takeover by the management is considered to be in the best interests of the shareholders, if the resistance would lead to initial bidder increasing the offer price or if the competing bidder offers a higher price.

169. *(b)* The defense where target companies often try to get a court injunction temporarily stopping the takeover attempt is called a litigation. By preventing the potential acquirer from buying more stocks, the target firm buys the time to erect additional takeover defenses.

170. *(c)* A hostile tender offer with a short time for response is called the Saturday night special.

171. *(c)* Management entrenchment hypothesis is a theory which states that antitakeover efforts

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are motivated by managers' self-interests in keeping their jobs rather than the best interests of shareholders.

172. *(b)* Under the back-end rights plan, shareholders receive the rights dividend. When the acquirer obtains shares of the target in excess of a limit, holders excluding the acquirer can exchange a right and a share of the stock for senior securities or cash equal in value to a back-end price set by the board of directors of the target firm.

173. *(c)* An ownership flip over plan is a poison pill antitakeover defense often included as part of a flip over plan. Target shareholders are issued the rights to purchase target shares at a discount if an acquirer passes a specified level of ownership.

174. *(b)* Fair price amendment is an antitakeover charter amendment which waives the supermajority approval requirement for a change of control if a fair price is paid for all the purchased shares. The fair price is the highest price paid by the bidder during a specified period and is sometimes required to exceed an amount determined relative to accounting earnings or book value of the target. Hence, it is used to defend against two-tier tender offers that are not approved by the target's board.

175. *(a)* Super majority amendments require shareholder approval by at least two thirds vote and sometimes as much as 90 percent of the voting power of outstanding capital stock for all transactions involving change of control.

176. *(b)* When a standstill agreement is made without a repurchase agreement, the large blockholder would not increase his ownership, which presumably will put him in an effective control position.

Management Guides for M&A Activity

177. *(a)* Drucker's Commandments for successful acquisitions say that the acquirer must contribute something to the acquired firm.

178. *(e)* The merger activity is positively correlated with the rates of growth of the nominal GNP suggesting that mergers are motivated by the availability of investment opportunities, especially in growth industries. Higher long-term cost of capital means fewer investment opportunities and hence fewer conglomerate mergers especially.

179. *(e)* All the given alternatives are key valuation parameters according to Rappaport.

180. *(e)* The long range strategic plans include:

i. Environmental reassessment.

ii. Consideration of capabilities, missions and environmental interaction from the company's point of view.

iii. Emphasis on process rather than particular goals or objectives.

iv. Emphasis on iteration and iterative feedback process.

v. Recognition of the need for coordination and consistency in the resulting long range planning processes with respect to individual divisions, product-market activities, and optimization from the standpoint of the firms as a whole.

vi. Recognition of the needs to relate the firm's changing environment and constituencies.

vii. Integration of the planning process into a reward and penalty or incentive system, taking a long range time perspective.

181. *(d)* The gaps between the firm's objectives and its potential based on the present capabilities can be removed by taking some tentative decisions. The process may be repeated from some different management function orientation. The firm may even go for broader orientations to the effective alignment of the firm with its environments and constituencies.

182. *(e)* The broader orientation to the effective alignment of the firm with respect to its environment and constituencies is carried out by the way of different approaches: choosing

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products related to the needs or missions of the customer that will provide large markets; studying the technological bottlenecks which may come out with some solutions that may create new markets; emphasizing on the theory that attractive product fallout will result from such competence; emphasizing on the economic criteria including attractive growth prospects and appropriate stability.

183. *(b)* Size objectives are established in order to use the fixed factors effectively. It may be expressed in critical mass. Critical mass refers to the size a firm must achieve in order to attain cost levels that enable the firm to operate profitably at market prices.

184. *(d)* Establishing goals in terms of growth of the economy or the firm's industry i.e., quantifying the goals help in the easy comparison of the established goals with the forecast of the firm.

Models of the Takeover Process

185. *(b)* When a shareholder believes that the tender offer will fail, he or she will tender in order to receive the offer price (p) which is greater than the value of the share without improvement due to takeover (q).

186. *(d)* Winner's curse is a tendency that, in a bidding contest or in some types of auctions, the winner is the bidder with the highest (overoptimistic) estimate of value. This explains the high frequency of negative returns to acquiring firms in takeovers in case of multiple bidders.

187. *(b)* $Z_H = 120$; $Z_L = 100$; $\alpha_{max} = 0.2$

B = 110. i.e. (120 + 100) / 2

The value function:

$V(B, \alpha; Z) = P(B)[0.5Z - (0.5 - \alpha)B]$

$= P(110)[0.5 \times 120 - (0.3)110]$

$= 0.8045[60-33] = 21.7215$

= 22 (approximately).

188. *(c)* In a diffusely-held corporation, it may not pay a small shareholder to make expenditures on monitoring the performances of the management. Shareholders may simply free-ride on the efforts put in by other shareholders in monitoring and also share the results of improvement of the firm's performance.

189. *(e)* The anticipated dilution induces the shareholders to tender their shares at a lower price. Further, the announcement of the two-tier prices would lead to more competition among bidders leading to maximization of the differentiation of first and second-tier prices. This in turn, would increase the cost to shareholders for declining to tender.

190. *(e)* The separation equilibrium is characterized as: a low-gain bidder offering a low bid and a high-gain bidder offering a high bid. The bids reveal the achievable gains from the takeover. Further, the high-gain bidders do not offer low bids as rejections are more costly to them.

191. *(b)* Shleifer and Vishny model looks into the implications of large shareholders. It says that as the proportion of the large shareholders of the firm increases, the likeliness the firms being taken over increases as well.

192. *(a)* A bid for $(0.5 - \alpha)$ shares would give the control of the firm to L.

193. *(c)* The increase in the proportion of shares held by L, the largest shareholder, decreases the takeover premium but increases the market value of the firm. This results in the stocks repurchased increasing the stock price as well as α, provided, L does not tender.

194. *(a)* The HT model examines the situation after a successful takeover where the dilution of the value of the shares of minority shareholders is anticipated.

195. *(d)* Since, the initial foot holdings of bidders vary widely, the model emphasizes on the strategies for the target shares.

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Frequently used Formulae

Free Cash Flow Basis for Firm Valuation

Four Basic Models

1. Valuation of a firm with no growth

$$V_0 = \frac{X_0(1-T)}{k}$$

2. Valuation of a firm with constant growth

$$V_0 = \frac{X_0(1-T)(1-b)(1+g)}{k-g}$$

3. Valuation of a firm with temporary supernormal growth, followed by no growth

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

4. Valuation of a firm with supernormal growth followed by constant growth

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g_c} \text{ x } \frac{(1+g_s)^{n+1}}{(1+k)^n}$$

Where,

V_0	=	Value of the firm
X_0	=	Free cash inflows in period 0
k	=	Cost of capital
T	=	Tax rate
g_s	=	Rate of supernormal growth
g_c	=	Rate of constant growth
b_s	=	Ratio of net investment to after-tax NOI in the supernormal growth period
b_c	=	Ratio of net investment to after tax NOI in the constant growth period
n	=	Number of years.

Dividend Growth Valuation Model

Equity Valuation in Dividend Form

1. Firm with no growth

$$S_0 = \frac{D_0}{k_e}$$

2. Firm with constant growth

$$S_0 = \frac{D_1}{k_e - g}$$

3. Firm with temporary supernormal growth, followed by no growth

$$S_0 = \sum_{t=1}^{n}\frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1+g_s)^{n+1}}{k_e(1+k_e)^n}$$

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4. Firm with temporary supernormal growth followed by constant growth

$$S_0 = \sum_{t=1}^{n} \frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1-b_c)(1+g_s)^{n+1}}{(k_e - g_c)(1+k_e)^n}$$

Where,

S_0	=	Value of equity of the firm
D_t	=	Dividends of the firm per period
Y_t	=	Net income of the firm per period
k_e	=	Cost of equity of the firm
b_c	=	Retention ratio relative to net income
g_s	=	Rate of supernormal growth
g_c	=	Rate of constant growth
n	=	Number of years.

Cost of Equity = k_e

k_e	=	$R_f + \beta\,(R_m - R_f)$ Where, k_e = Cost of equity capital or the rate of return
R_f	=	Rate of return required on a risk-free investment
R_m	=	Required rate of return on market.

Weighted Average Cost of Capital = k_0

$$k_0 = k_e \frac{S}{V} + k_p \frac{P}{V} + k_d (1-t) \frac{B}{V}$$

k_0	=	Weighted average cost of capital
k_e	=	Cost of equity capital
k_d	=	Cost of debt
S	=	Market value of equity capital
B	=	Market value of debt
P	=	Market value of preference capital
V	=	Sum of market values of equity capital, preference capital and the debt i.e., S + P + B
t	=	Tax rate applicable to the firm.

Continuing Value or Terminal Value of a Firm = $(FCF_{n+1})/k - g$

FCF_{n+1} is the expected free cash flow for the year n+1

Where,

FCF_{n+1}	=	$FCF_n(1+g)$
k	=	Weighted average cost of capital of the firm
g	=	Expected perpetual growth rate of free cash flow.

Present Value of Dividends can also be Calculated by using the Formula

$$\text{Present value of dividends} = \frac{DPS_0(1+g)\left(1 - \frac{(1+g)^n}{(1+k_e)^n}\right)}{k_e - g}$$

Where,

DPS_0	=	Dividend per share
g	=	Growth rate in dividends
k_e	=	Cost of equity
n	=	Number of years.

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Free Cash Flow to Equity

It is the residual cash flow left over after meeting interest and principal payments and providing for capital expenditures to maintain existing assets and create new assets for future growth. It is measured as follows:

The Free Cash Flow of Equity

= Net income + Depreciation – Capital spending – Change in working capital – Principal repayments + New debt issues

In the special case where capital expenditure and the working capital are financed by target debt financing ratio and the principal repayments are made from new debt issues, the free cash flow to equity is measured as follows:

FCFE = Net income + (Capital expenditure – Depreciation) (1 – Debt financing ratio) + Change in working capital (1 – Debt financing ratio)

Where, Debt financing ratio = $\frac{\text{Debt}}{(\text{Debt} + \text{Equity})}$

Free Cash Flow to Firm

It is the sum of the cash flows to all claimholders in the firm, including stockholders, bondholders, and preferred stockholders. There are two ways to measure the free cash flow.

1. FCFF = FCFE + Interest expense (1 – Tax rate) + Principal repayments – New debt issues + Preference dividends
2. FCFF = EBIT (1 – Tax rate) + Depreciation – Capital expenditure – Change in working capital

Expected Growth Rate

Expected growth rate = Retention ratio x Return on equity

$$g = b\ [\text{ROA} + \frac{D}{E}\{\text{ROA} - i(1-t)\}]$$

Where,

g = Growth rate in earnings

b = Retention ratio.

Return on equity = $\text{ROA} + \frac{D}{E}\{\text{ROA} - i(1-t)\}$

ROA = Return on Assets = EBIT (1– t)/ (BV of debt + BV of equity)

D/E = Debt/Equity ratio

i = Interest rate on debt

t = Marginal tax rate.

Pay-out ratio = 1 – Retention ratio

$$= 1 - \frac{g}{[\text{ROA} + \frac{D}{E}\{\text{ROA} - i(1-t)\}]}$$

Expected Beta

New Beta = {Old Beta/[1+ (1 – t) old D/E]} x [1+ (1 – t) New D/E ratio]}

Where, D/E = Debt equity ratio

t = Marginal tax rate.

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Value of the Firm according to the Miller-Modigliani Approach

$$V_0 = \frac{X(1-T)}{k}\left\{1 + \frac{b(r-k)}{g-k}\left[\left(\frac{1+g}{1+k}\right)^n - 1\right]\right\}(1+g)$$

Where,

X = Net operating income

k = Cost of capital

T = Tax rate

b = Investment opportunities per rupee after tax cash flows

n = Number of years

g = Growth rate

r = Profitability rate after tax.

Value of the Firm according to the Stern Model

Value of the firm = Value of supernormal growth period + Value at the end of growth period discounted to present

Which is given as

$$V_0 = FCF_1\left(\frac{FVIFA_{(h\%,n)}}{1+k}\right) + NOPAT_1\left(\frac{FVIF_{(h\%,n)}}{k}\right)$$

Where,

FCF_1 = $X_1(1 – T)(1 – b)$

$NOPAT_1$ = $X_1(1 – T)$

Investors Required Ownership Position

$$IOR = \frac{I_R}{[(P/E)_{TV} \times NI_{TV}]/(1+i)^n}$$

Where,

IOR = Investor's required ownership percentage

I_R = Required initial investment in rupees

$(P/E)_{TV}$ = Projected price/Earnings ratio for terminal value

NI_{TV} = Terminal year's net income

i = Cost of capital of the venture capitalist.

Purchase Consideration

Purchase Consideration = Assets taken over at agreed price – Liabilities taken over at agreed price

(Or)

Purchase Consideration = Shares issued + Share premium + Debentures issued + Other assets issued

Goodwill = Purchase consideration – Net assets acquired

Deferred Payment Plan

According to the base period earn-out method under deferred payment plan, the basis for determining the required number of shares to be issued is given as

$$\frac{\text{Excess Earnings x P/E Ratio}}{\text{Share Price (Acquiring firm)}}$$

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Conn & Nielson Model

$$\text{Exchange Ratio} = \frac{-S_1}{S_2} + \frac{(E_1 + E_2)PE_{12}}{P_1 S_1}$$

Where,

ER = Exchange ratio

P = Price per share

EPS = Earnings per share

PE = Price to earnings multiple

S = Number of issued shares.

Net Acquisition

Value = $NAV = PV_{AB} - (PV_A + PV_B) - P - E$

Where,

NAV = Net acquisition value

PV_{AB} = Present value of the merged entity

PV_A = Present value of firm A

PV_B = Present value of firm B

P = Premium paid by firm A to acquire firm B = Purchase consideration – PV_B

E = Expenses involved in the merger

Gain = $PV_{AB} - (PV_B + PV_B)$

Post-merger EPS

EPS = $E_{AB}/[N_A + N_B \text{ x } (P_A/P_B)]$.

Where,

E_{AB} = Sum of the current earnings of the target and acquiring companies + Any increase in earnings due to synergy

N_A = Acquiring company's outstanding shares

N_B = Number of target company's outstanding shares

P_A = Price offered for the target company

P_B = Current price of the acquiring company's stock.

Basic Stock Repurchase Model

According to the basic stock repurchase model

$P_E N_E = P_0 N_0 - P_T (N_0 - N_E) + W$

Where,

P_0 = Pre-announcement share price

P_T = Tender price

P_E = Post-expiration share price

N_0 = Pre-announcement number of shares outstanding

N_E = Number of shares outstanding after repurchase

W = Shareholder wealth effect caused by the share repurchase.

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Part II: Problems

1. Magnus International is a firm engaged in textile industry. The firm desires to limit its leverage to 30% of the total capital. The marginal tax rate is 0.4 and beta is 1.5. The corporate bond rate is 8% and the ten year G-Sec is trading at 5%. The expected annual return on stocks is 10%. Annual FCFF is expected to remain at Rs.4 million indefinitely.

Estimate the cost of capital and the value of a firm whose capital structure consists only of common equity and debt.

2. From the information given below you are required to compute the value of M/s Alekhya Ltd.

Asset value for year 1 = Rs.20 lakh;

The assets required for the business grow at 15% per year to year 4, at 10% in years 5 & 6 and @ 7% afterward; earnings for year 1 is Rs.2.5 lakh.

The earnings growth rate is 17% from year 2 to year 5 and 11% in years 6 and 7 and 7% thereafter. The additional investment from year 1 to year 6 is given below.

(Rs. in lakh)

Year	Investment
1	2.8
2	3.25
3	3.50
4	4.15
5	4.80
6	5.35
7	3.99

Assume the horizon to be 6 years, the long run growth rate to be 7% and the discount rate to be 10.5%.

3. The free cash flow of a firm is projected to grow at a compound annual average rate of 35% for the next 5 years. Growth is then expected to slow down to a normal 5% annual growth rate. The current year's cash flow to the firm is Rs.4 lakh. The firm's cost of capital during the high growth period is 18% and 12% beyond the fifth year, as growth stabilizes.

Calculate the value of the firm.

4. The following information is available for M/s Realvalues Ltd. for the year 2000.

(Amount in Rs.)

Outstanding debt	= 850 cr.
Share price	= 35 per share
No. of outstanding shares	= 32 cr.
Net income	= 7.75 cr.
EBIT	= 118.75 cr.
Interest expense	= 106.25 cr.
Capital expenditure	= 110 cr.
Depreciation	= 110 cr.
Working capital	= 17.5 cr.
Growth rate for EBIT	= 8.5% (from 2001 to 2005)
Growth rate	= 5% (beyond 2005)
Free cash flow	= 122.175 cr. (beyond 2005)

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The capital expenditure is expected to be equally offset by depreciation in future and the debt ratio of the company is expected to decline by 30% by 2005.

Your are required to:

a. Compute the value of the firm.

b. Compute the value per share. Is the company under or overvalued?

5. The value of the firm using the free cash flow to the firm valuation method is estimated to be Rs.20 lakh. The book value of the firm's debt is Rs.15 lakh, with annual interest expense of Rs.1.5 lakh for 5 years. The debt is an "interest only note" with a repayment of principal at maturity. The firm's current cost of debt is 10%. What is the value of the firm to equity investors?

6. The following numerical parameters are given.

X_0 = Net operating income = Rs.1,000

T = Tax rate = 40%

b = Retention ratio = 60%

r = Profitability rate = 30%

n = Number of years = 10

k = Cost of capital = 10%

P = Inflation rate = 0

Z = Reinvestment rate = 0

Estimate the value of the firm using the appropriate formula.

7. Gama & Co. Ltd. has a required rate of return of 12%. Its net operating income now is Rs.20 lakh and is expected to grow at a rate of 30% for 10 years, with a ratio of investment to after-tax net operating income of 0.20. The applicable tax rate is 40 %.

If, after the period of supernormal growth, the net operating income of Gama & Co. has zero growth, what is the current value of the firm?

8. In the above problem, if, after the period of supernormal growth, the net operating income grows at 10% per year, with the investment to after-tax NOI ratio still being 0.20, what is the current value of the firm?

Also, compare the value to after-tax earnings ratio for the two alternative assumptions with respect to the growth of net operating earnings after the period of supernormal growth.

9. Smart Ltd. has free cash flow (X) of Rs.19 lakh, and is expected to grow at a rate of 26.5% for the next 5 years. Its ratio of investment to after-tax NOI (b) is 0.5. The applicable tax rate is 30%. Smart's cost of capital is 10%. After the period of super normal growth, Smart Ltd. is not expected to grow any further.

a. What is the value of Smart Ltd.?

b. What is the implied profitability rate (r)?

c. If Smart has Rs.110 lakh interest bearing debt, what is the value of Smart's equity?

10. The dividend per share for Charlotte Pharmaceuticals Ltd. for the past five years is as below:

Year	DPS
1997	0.10
1998	0.11
1999	0.12
2000	0.13
2001	0.15

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The Board of Directors currently expects that the future dividend growth rate will continue indefinitely at the same rate as in the past. The financial manager has determined that, at the present time, the risk-free rate of return is 7%, the market return is 15% and Beta is 1.37.

a. Calculate the current value of the Company's share.

b. Investors of the company perceive an increased risk element in the firm, as a result of the new technology adopted by the firm, causing an increase in the firm's Beta to 1.50. If the risk-free return and the market return remains unchanged, and ignoring any increase in dividend returns, show how this increase in risk is likely to affect the company's share value.

11. Zeta & Company had a net income of Rs.20 lakh for the year 2001 and declared a dividend of Rs.8 lakh. The earnings and dividends of Zeta are expected to grow at an annual rate of 28 percent for four years after which they would stop growing. The annual retention ratio for the company was 50 percent of the net income. The required return of investments with risk characteristics of the company stock is 15%.

Estimate the value of equity of the firm.

12. A Ltd. wishes to acquire B Ltd. The acquisition would require 200 lakh of initial investment and produces after-tax cash flows to the firm of Rs.60 lakh forever. A Ltd. borrows 80 lakh, using perpetual bonds with an interest rate of 9% and raises the rest from internal funds. The cost of equity is 16% and the tax rate for the firm is 36%.

Estimate the net present value of the project using

a. Cash flows to equity

b. Cash flows to the firm.

13. AB & Co. is a large company in the Iron and Steel industry. Given its large size, AB & Co. is unlikely to grow faster than the economy in the long-term. AB & Co. pays 1.5 per share as dividends from the Rs.2.75 obtained as cash flow from equity. The company plans to fund its capital expenditure and the working capital at target debt ratio and the principal repayments are made from new debt issues. The background information on the firm is as follows:

Current Information

Earnings per share	= Rs.3.5
Capital expenditure per share	= Rs.3.4
Depreciation per share	= Rs.2.75
Change in working capital per share	= 0.55
Debt financing ratio	= 25%

Earnings, capital expenditure, depreciation and working capital are all expected to grow at 6% a year. The Beta for the stock is 0.80, and the Treasury bond rate is 7.5%. Estimate the value of the firm using the FCFE model. Risk premium for the company's equity is 5.5%.

14. Bank XY has recently witnessed a surge in stock prices. In 2001, the bank had an EPS of Rs.27 and paid dividends per share of Rs.9. In addition, assume that the following are estimated inputs for the high growth and stable growth periods. The market premium is estimated to be 5.5%.

Particulars	High growth period	Stable growth period
Length of period	5 years	Forever, after 5 years
Expected growth rate	?	6%
Beta	1.45	1.10
Return on assets	12.5%	12.5%
Debt equity ratio	100%	100%
Dividend pay-out ratio	33.33%	?
Interest on debt	8.5%	8.5%

The corporate tax rate is 36%.

Estimate the value of equity of the firm when the risk-free rate is 7.5%.

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15. Apex, a consumer durable manufacturer, reported earnings per share of Rs.3.20 in 1995 and paid dividends per share of Rs.1.7 in that year. The firm reported depreciation of Rs.350 lakh in 1995 and capital expenditures of Rs.475 lakh. There were 160 lakh outstanding shares traded at Rs.51 per share. The ratio of capital expenditure to depreciation is expected to be maintained in the long-term. The working capital needs are negligible. Apex had a debt outstanding of Rs.1,600 lakh and intends to maintain its current financing mix of debt and equity to finance future investment needs. The firm is in the steady state, and earnings are expected to grow at 7% per year. The stock had a Beta of 1.05, the Treasury bill rate is 6.25% and the market premium is 5.5%.

a. Estimate the value per share using the dividend discount model.

b. Estimate the value per share, using the FCFE model.

c. How would you explain the difference between the two models, and which one would you use as a benchmark to compare with the market price?

16. Raichand Corporation is one of the largest automobile manufacturers in India. The company reported an EBIT of Rs.500 lakh in 20x1. The capital expenditures in 20x1 amounted to Rs.300 lakh and the working capital was 20% of revenues (which were Rs.7,000 lakh). Depreciation in 20x1 was 200 lakh. The firm is expected to operate with high growth for 5 years. Other information for this high growth phase is as follows:

Length of the high growth phase = 5 years

Expected growth rate = 9%

Beta = 1.2

Cost of debt = 10%

Debt equity ratio = 50%

The firm expects revenues, earnings, capital expenditure and depreciation to grow at 9% a year from 20x2 – 20x6, after which the growth rate is expected to drop to 4%. Capital spending will offset depreciation in the steady state period. The tax rate for the firm is 35%. The Treasury bill rate is 7% and the market premium is 5.5%. Other information for the steady state is as follows:

Beta = 1

Cost of debt = 9%

Debt equity ratio = 0.25

Estimate the value of the firm.

17. Jack & Well, a large producer of electronic goods, reported earnings per share of Rs.1.5 in 20x1 and paid dividends per share of Rs.0.42. In 20x1, the firm also reported the following:

Net income = Rs.30 lakh

Interest expense = Rs.0.8 lakh

Book value of debt = Rs.7.6 lakh

Book value of equity = Rs.160 lakh

The firm faced a corporate tax rate of 38.5%. The market value of debt to equity ratio is 5%. The Treasury bond rate is 7%.

The firm expects to maintain these financial fundamentals from 20x1 – 20x6, at which time it is expected to become a stable firm, with an earnings growth rate of 6%. The firm's financial characteristics will approach industry averages after 20x6. The industry averages are as follows:

Return on Assets = 12.5%

Debt/Equity ratio = 25%

Interest Rate on Debt = 7%

Jack and Well had a Beta of 0.85 in 20x1, and the unlevered Beta is not expected to change over time. The rate of return on the market is 12.5%.

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a. What is the expected growth rate in earnings, for the high growth period (20x1 – 20x6)?

b. What is the expected pay-out ratio after 20x6?

c. What is the expected Beta after 20x6?

d. What is the expected price at the end of 20x6?

e. What is the value of the stock, using the two stage dividend discount model?

f. How much of the value can be attributed to extraordinary growth and/or to stable growth?

18. The following information is available for a firm which is presently operating in high growth phase. Use the three stage dividend discount model and compute the value of the equity of the firm.

Current earnings per share – Rs.2

Dividend per share – Re 0.4

Other Details

Particulars	High growth	Transition period	Stable growth
Length of high growth period	5 years	5 years	Forever after 10 years
Expected growth rate	24%	21.7% in the 6th year, 16% in the 7th year, 12% in the 8th, 8% in the 9th and 4% in the 10th year	4 %
Pay-out ratio	20%	Increase from 20% to 70% over the same period in linear increments	70%
Beta	1.5	Drop in linear increments over the same period to 1	1

The Treasury bill is being traded at 7.5% and the market premium is 5.5%.

19. The following information of a firm is available

EBIT = Rs.120 lakh

Revenues = Rs.650 lakh

Capital Expenditure = Rs.140 lakh

Depreciation and Amortization = Rs.115 lakh

Working Capital = 10% of revenues

Other information

Particulars	High growth	Transition period	Stable growth
Length	5 years	5 years	Forever after 10 years
Expected growth rate in Revenues/EBIT	30%	Decline to 5% in year 10 in linear increments	5%
Beta	1.5	1.25	1
Debt ratio	60%	50%	40%
Pretax cost of debt	10%	9%	8.5%

In high growth phase:

Capital expenditure and depreciation are expected to grow at the same rate as revenues and EBIT.

Working capital will remain at 10% of revenues.

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In the transition period:

Capital expenditure will grow at 8% a year and depreciation at 12% a year.

Working capital will remain at 10% of revenues.

The company is in the 35% tax bracket. The Treasury bill is traded at 7.5% and the market premium is 5.5%.

Use the above data to estimate the free cash flow to the firm and the present value of the firm.

20. AK Ltd. acquired SR Ltd. after a hotly contested takeover for approximately Rs.110 per share. The deal was justified on the basis of the existence of synergy. The financial data of the two firms prior to the merger were as follows:

(Amount in Rs.)

	SR Ltd.	AK Ltd.
Current EBIT (1 – t)	500 lakh	4000 lakh
Capital expenditure – Depreciation	70 lakh	0 (offset)
Expected growth rate – next 5 years	8 %	6%
Expected growth rate after 5 years	5%	5%
Debt/Debt+ Equity	9%	21%
After-tax cost of debt	6%	5.4%
Beta – next 5 years	1.15	0.95
Beta – after 5 years	1	1

The Treasury bill rate at the time of merger was 9%. The growth rate of the combined firm is expected to increase from 6% to 7% during the next five years, as a consequence to the merger. The growth rate after year 5 is unchanged. The costs of equity and debt of the firms are summarized in the table below.

Particulars	SR	AK	Combined Firm
Debt (%)	9	21	20
Cost of debt	6	5.4	5.42
Equity (%)	91	79	80

Estimate the value of the combined firm and also the value of SR to AK Ltd.

21. Sagar Motors, an automobile parts manufacturing firm is in a cyclical business. It plans to acquire Agni Auto, an automobile service firm whose business is non-cyclical and in high growth, the motive being diversification of business. The characteristics of the two firms are as follows:

Particulars	Agni	Sagar
Current free cash flow to the firm (Rs.)	150	240
Expected growth rate		
First 3 years	25%	15%
After 3 years	6.5%	6.5%
Debt financing ratio	40%	40%
Cost of debt	10%	8%
Beta		
First 3 years	1.25	1
After 3 years	1	1

The Treasury bill rate is 7% and the market premium is 5.5%. The tax rate for both the firms is 36%.

Estimate the value of the two firms independently and also the value of the combined firm.

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22. Century Private Ltd., which is reporting a net operating income of Rs.15,00,000, is experiencing a growth of 9% on its net operating income. Their investments opportunity per dollar of after-tax cash flows is 5%. The debt and equity components of the firm are Rs.20,00,000 and Rs.20,00,000 respectively. It is expecting a life of 15 years. Interest paid by the firm on its debts is Rs.2,00,000. Cost of equity is 15% and the profitability rate before tax is 30%. What is the value of Century Pvt Ltd. assuming a tax rate of 50%? (Use Miller-Modigliani Model)

23. Mudra Entertainment Ltd. has set-up a division for training the VJs. The investment this year was Rs.1,00,000 and the net operating income was Rs.1,20,000. Both of these are expected to grow at 20%. The cost of capital is 12%. Tax rate for the firm is 40%.

Carry out the valuation of the division with the Miller-Modigliani approach if n = 15 years.

24. From the data given in the above problem, carry out the valuation of the division as per the Rappaport Approach.

25. Vijay & Co. has a net operating income of Rs.20,00,000. The rate of supernormal growth is 25%. The company has a ratio of net investment to after-tax NOI as 0.5. What would be value of the company as per Stern's approach if the cost of capital is 15%? (Assume: Tax rate = 40%; n = 10 yrs.)

26. Estimate the value per share of Dreams Ltd. The following financial data is available for the firm

R_0 = Initial year revenues = Rs.10 lakh

n = Number of Supernormal growth years = 5

m = Net operating income margin = 15%

T= Tax rate = 40%

Other Details

Particulars	Supernormal growth period	Terminal period
Growth rate	g_S =15%	g_C = 4%
Depreciation	d_S = 5%	d_C = 3%
Working capital expenditure	I_{WC1} = 4%	I_{WC2} = 1%
Capital expenditures (gross)	I_{CE1} = 9%	I_{CE2} = 5%
Cost of capital	k_S = 11%	k_C = 12%

The firm had marketable securities of Rs.1.5 lakh and interest bearing debt of Rs.2 lakh. The number of outstanding shares of the firm is 50,000.

27. SK India Ltd. is a manufacturing company in the cement industry. The earnings of the company have dropped over the last few years and so the company is planning a major restructuring changing both its assets and liability mixes. The current earnings per share for the firm is Rs.10. The effects of restructuring on growth rate and on beta are as follows:

Particulars	Before	After
ROA	10%	18%
D/E	0.20	1
Beta	0.9	1.30
Interest rate	9%	10%
Pay-out ratio	0.50	0.25
Retention	0.50	0.75

The firm plans to borrow and repurchase the stock to get the optimal ratio. The firm is in the 35% tax bracket.

The earnings growth rate after 4 years is expected to be 7%, and the dividend pay-out is expected to be 50% after year 4, whether or not restructuring occurs. The beta of the stock is expected to be 1 in the stable phase, regardless of the restructuring. The Treasury bill rate is 7.5% and the market premium is 5.5%.

Estimate the increase in the price per share due to restructuring.

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28. Effervescent Chemicals Ltd. (ECL) is planning to issue fully convertible debentures of face value Rs.1,000. The debentures carry coupon at the rate of 10% payable annually. Each debenture is convertible into five equity shares of face value of Rs.100 each at the end of third and fourth years. The company pays a dividend of Rs.20 per share at present, which is expected to grow at 15% every year, infinitely. The required rate of return on the shares of the company is 25%.

You are required to suggest whether an investor, who wants a return of 20% from the debenture, should invest in it? Support your answer with suitable workings.

29. SBL Ltd. has in its books optionally fully convertible debentures that it issued two years ago. The details of the debentures are as follows:

Face value	Rs.1,000 each
Coupon	12%
Conversion	2 years from now, into ten equity shares of face value Rs.10, at a price of Rs.100 each. As the conversion is optional, the debentures generally trade at a premium of 10% on their intrinsic worth, excluding the value of the option.
Redemption	If the option to convert is not exercised, at the end of three years from now, in a single payment.
Current market price of the company's shares	Rs.175
Yield on three year debentures of similar companies	15%

You are required to answer the following:

a. What should be the current market price of the debenture?

b. If the company has an option to call the debentures at a price of Rs.1,200 each, should it call? Why?

c. How will your answer to (a) and (b) change if the current market price of the company's share is Rs.75?

30. The total book value of the assets of Goodhealth Pharma Ltd. (GPL) is Rs.180 crore. Their current market value is expected to be Rs.200 crore. The company has a total outstanding debt of Rs.175 crore in its books. Charak Pharma Ltd. (CPL) is planning to acquire GPL. The analyst of the company estimates that in the next one year, the market value of the assets of GPL may move up or down by 25%. His estimates indicate that the upward and downward movements are equally likely. The risk-free rate of interest at present is 9%. Calculate the value of the equity of GPL based on the binomial model.

31. Omega Ltd. has assets worth Rs.200 crore. Its equity consisting of 5 crore equity shares is currently quoting at Rs.20 per share (face value Rs.10) in the market. As on March 31, 1999, the company had a debt of Rs.150 crore in its books including non-convertible debentures (face value Rs.100) of Rs.75 crore. Each debenture has a detachable warrant with it which entitles the debentureholder to apply for one equity share at a price of Rs.22 after one year from now. The standard deviation (volatility) of the continuously compounded annual rate of return from the share is 25%. The risk-free rate of return may be assumed as 15% per annum.

You are required to find out the value of the warrant.

32. Consider the following information relating to three companies, which are similar to Tasty Foods Ltd.

Ratio	Jumbo Foods Ltd.	Fresh Foods Ltd.	Natural Foods Ltd.
Price to EBDIT	20	19	22
Price to Book Value	3	4	2
Price to Sales	4	3	5

The EBDIT of Tasty Foods Ltd. is Rs.20 lakh, book value of assets is Rs.75 lakh and sales are Rs.500 lakh. It may be assumed that the average ratios of the three companies are suitable for Tasty Foods Ltd.

Estimate the value of Tasty Foods Ltd. based on the above information.

33. A, B & C are three firms operating in the cement industry similar in most aspects. The management of Firm W which is also in the cement industry is not sure about the value of its company. Firm 'W' has 100 lakh as revenues, 60 lakh as book value of equity and 5 lakh as net income.

Firm W attempts to study similar companies in the cement industry which are comparable to 'W'. The study reveals the following:

	A	B	C
Market/Revenue	1.2	1.0	0.8
Market/Book	1.3	1.2	2
Market/Net income	20	15	25

Determine the value of 'W' using the Comparable Company approach.

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34. XY Industrial Textile Company has hired you as a financial consultant to value the company. The textile industry has been very stable for some time and the firms that operate in the industry are similar in size and have similar product market mix characteristics. Use the comparables method to value the equity of XY. In performing the comparables analysis, use the following ratios

a. Market to book value

b. Market to replacement cost

c. Market to sales

d. Market to after-tax EBIT i.e., [EBIT (1 – T)].

The following data is available

(Amount is Rs.)

	SK	AS	XY
Market Value	Rs.450	Rs.400	
Book value	400	300	250
Replacement cost	600	550	500
Revenues	550	450	500
Net income	18	16	14

35. Sally & Co. had 1000 equity shares outstanding and its earnings per share are Rs.40 in 2001. It paid-out 70% of its earnings as dividends. The growth rate in earnings and dividends in the long-term is expected to be 6%. The Beta for the company is 0.80 and the Treasury bond rate is 7%. The market premium is 5.5%.

The return on equity is 15%. The revenues for the year 2001 were Rs.8,50,000.

From the given data, estimate the "multiples" that are commonly used in the relative valuation of firms.

36. Newland Ltd. is a retailing firm that is operating at a level below potential. Its existing management has taken projects that have, on average, a return on assets of 10%, well below the retail industry average of 16%. The firm has no debt, although its cash flows would support a debt level of 40% of equity with an interest rate of 9%. The firm also pays 60% of its earnings as dividends, although its cash flows would support a dividend pay-out of only 40%. The current earnings per share is Rs.2, and its current beta is 0.8. The return on the market is 12.5% and the Government Treasury bill rate is 7%. The firm is expected to reach

a steady state after 5 years and grow at 6% after that under the present management and at 7% with a change in management. Assume that there are no taxes and the dividend pay-out ratio is 60% after year 5 whether or not there is change in management. The beta of the firm is expected to be 1 in the stable phase, again regardless of the change in management.

Estimate the value of the company under both the incumbent management and the new management.

37. Big company is interested in acquiring Small Company. Small company which is fully owned by the current owner has revenues of Rs.12 lakh and an EBIT of Rs.2.75 lakh in the preceding year. The market value of the firm's debt and the book value of the firm's equity are Rs.4.5 lakh and Rs.4 lakh respectively. The debt/equity ratio for publicly traded firms in the same industry is 0.35 and the marginal tax rate is 36%. The ratio of the market value of equity to book value for these firms is 2 and average Beta of publicly traded firms that are in the same business is 1.8.

Capital expenditures and depreciation amounted to Rs.50,000 and Rs.30,000 respectively. They are expected to grow at the same rate as revenues for the next 4 years and to be equal beyond 4 years (i.e., capital spending will be internally funded). Due to outstanding working capital management practices, the change in working capital is expected to be effectively zero throughout the forecast period and beyond. The revenues of the firm are expected to grow 20% annually for the next 4 years, and 6% per year after that. Net income is expected to increase 20% a year for the next 4 years and 6% thereafter. The Treasury bill is trading at a rate of 7% and the market rate of return is 12.5%. The pre-tax cost of debt for a non-rated firm is 10%. Estimate the shareholder value of the firm.

38. A start-up company is seeking Rs.50 lakh for initial financing from a venture capital group. The venture capital requires a 40% compound annual average return. It expects to hold the investment for 8 years. The venture capital estimates that the firm, which is currently losing money, will earn Rs.50 lakh in net income in the 8th year and the P/E in the 8th year will be 40 times. What is the ownership position required by the venture capitalist?

39. Alpha Ltd. is planning to merge with Gama Ltd. The present value of Alpha is Rs.25 lakh and the present value of Gama is Rs.16 lakh. The merger is expected to bring cost savings to the extent of Rs.4 lakh and the expenses of the merger would be Rs.80,000. If Alpha agrees to pay Rs.18.25 lakh to Gama, what is the maximum value of synergy from the merger?

40. Ajanta Arts Ltd. (AAL) is planning to merge with Kala Emporiums Ltd. (KEL). The value of AAL is Rs.20 crore and that of KEL is Rs.12 crore, both in terms of present value of cash flows. The present value of cost savings expected from the merger is Rs.3 crore. The expenses of merger are expected to amount to Rs.0.40 crore. If AEL agrees to pay Rs.14 crore for KEL, calculate the maximum value of the synergies from the merger.

41. Star Ltd. has a value of Rs.75 lakh and Moon Ltd. has a value of Rs.20 lakh. If the two firms merge, cost savings with a present value of Rs.30 lakh would occur. Star Ltd. proposes to offer Rs.28 lakh as compensation to acquire Moon Ltd. Calculate the net present value of the merger to the two firms.

42. Two firms A & B are operating in the cement industry. Both the firms are planning for a merger. Firm A is worth Rs.200 lakh and B is worth Rs.50 lakh. On merging, the two would allow cost savings with a present value of Rs.25 lakh. Assume that B is bought by A for a cash of Rs.65 lakh.

Estimate

a. The value of the combined firm

b. The cost of the merger for firm A

c. The NPV to A's shareholders

d. The NPV to B's shareholders.

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43. The relevant financial details of two firms, just prior to a merger announcement are as follows:

	Day Ltd.	Night Ltd.
Market price per share	Rs.65	Rs.30
No. of shares	8,00,000	5,00,000
Market value of the firm	Rs.520,00,000	Rs.150,00,000

The merger is expected to bring gains which have a present value of Rs.120,00,000. Day Ltd. offers 2,46,000 shares in exchange for 5,00,000 shares to the shareholders of firm Night Ltd. Assuming that the market values of the two firms just before the merger announcement are equal to their present values as separate entities, calculate the NPV to Day Ltd. and Night Ltd. respectively.

44. As the finance manager of Al Hasan International, you are investigating the acquisition of Starlight Company. The following facts are given.

	Al Hasan	Starlight
Earning per share	Rs.6.75	Rs.2.5
Dividend per share	Rs.3.25	Rs.1.00
Price per share	Rs.48	Rs.15
Number of shares	60,00,000	20,00,000

Investors currently expect the dividends and earnings of Starlight to grow a steady rate of 7%. After acquisition this growth rate would increase to 8% without any additional investment.

Required:

a. What is the benefit of this acquisition?

b. What is the cost of this acquisition to Al Hasan if it pays (i) Rs.17 per share compensation (cash) to Starlight and (ii) offers one share for every 3 shares of Starlight?

45. Companies Alpha Ltd. & Beta Ltd. are valued as follows:

	Alpha Ltd.	Beta Ltd.
Earnings per share	Rs.8	Rs.1.75
Price per share	Rs.25	Rs.10
Number of shares	7,000	3,000

Alpha Ltd. acquires Beta Ltd. by offering 1 share of Alpha Ltd. for every 2 shares of Beta Ltd. If there is no economic gain from the merger, what is the price earnings ratio of Alpha's stock after the merger?

46. ABC Ltd. is contemplating the acquisition of XYZ Ltd. The values of the two companies are Rs.20 lakh and Rs.10 lakh. ABC estimates that by combining the two companies, it will reduce marketing and administrative costs by Rs.50,000 per year in perpetuity. ABC can either pay Rs.14 lakh cash for XYZ or offer a 50% holding in ABC. The opportunity cost of capital is 10%.

a. What is the gain from merger?

b. What is the cost of the cash offer?

c. What is the cost of the stock alternative?

47. In the above problem

a. What is the Net Present Value of the acquisition for firm A under the cash offer?

b. What is the NPV of the acquisition for firm A under the stock offer?

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48. The following information is given about two firms X and Y

	Firm X	Firm Y
Market price for share	Rs.60	Rs.20
Number of shares	6,00,000	2,00,000
Market value of the firm	Rs.360 lakh	Rs.40 lakh

Firm X intends to acquire Firm Y. The market price per share of Y Ltd. has increased by Rs.4 because of rumors that Y might get a favorable merger offer. Firm X assumes that by combining the two firms it will save in costs by Rs.20 lakh. Firm X has two options

i. Pay Rs.70 lakh cash for Firm Y.

ii. Offer 1,25,000 shares instead of Rs.70 lakh to the shareholders of Firm Y.

Calculate

a. The cost of the cash offer if Y's market price reflects only its value as a separate entity.

b. Cost of cash offer if Y's market price reflects the value of the merger announcement.

c. Apparent cost of the stock offer.

d. True cost of the stock offer.

49. Sun Pharma, with its need to grow and maintain its leadership position in the industry, is planning to acquire ABTCPL. The recent financial details of the two companies are as follows:

	Sun Pharma	ABTCPL
Profit after tax	Rs.2,200 lakh	Rs.40 lakh
Market price per share (face value Rs.10)	Rs.200	Rs.24
P/E Ratio	18.18	12
Projected growth rates (p.a.)	9%	5%

There are two views expressed by two leading consultants on the benefits due to synergy, one arguing that there can be no benefit from synergy while the other predicts a 3% increase in earnings after the acquisition.

a. If ABTCPL's shareholders want an exchange ratio of 0.4 (i.e. 0.4 shares of Sun Pharma for 1 share of ABTCPL), would that be acceptable to the shareholders of Sun Pharma if

   i. There is no synergy due to the merger?

   ii. There is an increase in earnings of the merged entity by 3% due to synergy?

b. If Sun Pharma accepts an exchange ratio of 0.4 and synergy benefits are not realized, will there be any dilution in EPS of Sun Pharma? If so, when will the dilution be wiped off?

50. Multicast Co. is charting out some possible takeovers. In this regard, it has sorted out Unicast Co. as the target. Taking the following data into consideration; answer the succeeding questions as the Treasurer of Multicast Co.

	Multicast Co.	Unicast Co.
Earnings per share	Rs.15.00	Rs.2.50
Dividend per share	Rs.13.00	Rs.1.80
Number of shares	10,000,000	5,000,000
Stock price	Rs.200	Rs.100

As per the estimations of an investor in Unicast Co., a steady growth of 8% is expected in the dividends and earnings of Unicast Co. However, it would increase to 11% under the new management with a combined value of Rs.3,000,000,000 without any additional capital brought in.

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a. What would be the gain from the acquisition?

b. If Multicast Co. pays Rs.150 in cash for each share of Unicast Co. What would the cost of the acquisition be?

c. Instead of paying in cash, if Multicast Co. decides to offer 1 share for every 3 shares held by holders of Unicast Co. What would the acquisition cost be?

51. Using the data in problem number 50

a. How would the cost of the cash offer and share offer be affected if the expected growth rate of Unicast Co. was not affected by the takeover?

b. Suppose that the probability of merger taking place is 70%, then what could be the value of the firm?

52. The merger proposal of HR Ltd. & AR Ltd. is under consideration. You are required to compute the NPV to HR Ltd. using the capital budgeting technique. The following information is provided.

Equity related post-tax cash flows of HR Ltd.

(Rs. in lakh)

Year	CF
1	80
2	92
3	100
4	112
5	120

Beyond year 5, the cash flows are expected to grow at a compound rate of 6% per year.

After the merger, the cash flows of the combined entity assume the following pattern.

(Rs. in lakh)

Year	CF
1	100
2	112
3	125
4	127
5	138

The cash flows beyond year 5 are expected to grow at a compound rate of 7% per year.

The number of outstanding shares of HR Ltd. prior to the merger is 10,00,000. The number of outstanding shares of AR Ltd. is Rs.8,00,000. The proposed exchange ratio is 0.25

Note: Assume a discount rate of 14% in both the cases.

53. Consider two firms that operate independently and have the following characteristics.

(Rs. in million)

	Metro Ltd.	Regency Ltd.
Reserves	6,000	3,000
Cost of goods sold	3,500	1,800
EBIT	2,500	1,200
Expected growth rate	5%	7%
Cost of capital	8%	9%

Both firms are in steady state, with capital spending offset by depreciation. Both firms have an effective tax rate of 40% and are financed only by equity.

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Scenario I

Assume that combining of the two firms will create economies of scale that will reduce the cost of goods sold to 48% of reserves.

Scenario II

Assume that as a consequence of the merger the combined firm is expected to increase its future growth to 7% while cost of goods sold is 60% and do not come down to 48%.

Scenario I & II are mutually exclusive.

You are required to

a. Compute the values of both the firms as separate entities.

b. Compute the value of both the firms together if there were absolutely no synergy at all from the merger.

c. Compute the cost of capital and the expected growth rate for the combined entity.

d. Compute the value of synergy in Scenario I and Scenario II.

54. Two firms AB and CD Corporation operate independently and have the following financial statements:

(Amount in Rs.)

Particulars	AB	CD
Revenues	80,000	40,000
COGS	60,000	24,000
EBIT	20,000	16,000
Expected growth rate	6 %	8 %
Cost of capital	10 %	12 %

Both firms are in a steady state, with capital spending offset by depreciation. No working capital is required, and both firms face a tax rate of 40%. Combining the two firms will create economies of scale in the form of shared distribution and advertising costs, which will reduce the cost of goods sold from 70% of revenues to 65% of revenues. Assume that the firm has no debt capital.

Estimate

a. The value of the two firms before the merger.

b. The value of the combined firm with synergy effect.

55. Sheraton, a retail chain store, is considering making a tender offer for M/S Metallic, a smaller company. Sheraton anticipates that the acquisition would create a synergy with a present value of Rs.60 lakh. Sheraton calculates that Metallic has a value of Rs.320 lakh while operating independently under the current management and that the value of Metallic's outstanding debt is Rs.110 lakh. Metallic has 5 lakh outstanding shares. Sheraton managers feel that they can increase the value of Metallic to Rs.450 lakh if they manage it. This increase in value will be in addition to the synergy noted above.

Calculate

a. The maximum price per share that Sheraton should offer under the present management.

b. The price per share to be offered by Sheraton under the changed management.

56. In addition to the information provided in the last problem, assume that Sheraton has already acquired 5.25% of the outstanding shares of Metallic and the current price per share is Rs.55.

How much should Sheraton be willing to pay for the remaining shares? Comment on your answer.

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57. Firm B is a pharmaceutical company. Firm A is considering buying Firm B. Development costs are expected to generate negative cash flows during the first 2 years of the forecast period of Rs.1 lakh and Rs.5 lakh respectively. Licensing fees are expected to generate positive cash flows during the years 3-5 of the forecast period of Rs.5,00,000, Rs.10,00,000 and Rs.15,00,000 respectively. Due to the emergence of competitive products, cash flows are expected to grow at a modest 5% annually after the fifth year. The discount rate for the first 5 years is estimated to be 20% and then drop to 10% beyond the fifth year. Also, the PV of the estimated synergy by combining A and B companies is 30 lakh. Calculate the minimum and maximum purchase prices for B Ltd.

58. A Ltd. is an acquiring company and its share price is Rs.80. It plans to acquire B Ltd. The share price offered to B Ltd. including appropriate premium is Rs.40. The combined earnings of the two companies are estimated to be Rs.9,00,000. The costs of the company due to the merger will decrease by Rs.1,00,000. If the acquiring company has 20,000 shares and the target company has 10,000 shares, what is the post merger EPS for the combined companies?

59. Mona Ltd. is planning to acquire Sona Ltd. provided there is synergy in the acquisition which will result in Mona Ltd. reporting an EPS of at least Rs.2.75. Consider the following financial data:

Mergers & Acquisitions

(Amount in Rs.)

Particulars	Mona Ltd.	Sona Ltd.
EPS	2.25	2.25
Market price per share	18	12
P/E ratio	8	5.3
Number of shares	1,50,000	1,50,000

There is no immediate gain in the merger though there will be long-term synergies.

Required:

Compute the exchange ratio which will raise the post-merger EPS of Mona Ltd. to Rs.2.75.

60. Ramya International is keen on reporting earnings per share of Rs.3.50 after acquiring the Overseas Corporation. The following financial data is given.

	Ramya International	Overseas Corporation
Earnings per share	Rs.2.50	Rs.2.50
Market price per share	Rs.28	Rs.18
Price earnings ratio	8	4
Number of shares	1,50,000	1,50,000

There is no gain from the merger.

Required:

What exchange ratio will raise the post-merger earnings per share of Ramya International to Rs.3.50?

61. HB Ltd. plans to acquire SB Ltd. The relevant financial details of the firms prior to merger announcement are given below.

	HB Ltd.	SB Ltd.
Market price per share	Rs.75	Rs.35
Number of shares	3,50,000	2,75,000

The merger is expected to bring gains which have a present value of Rs.4.50 million. HB Ltd. offers one share in exchange for every 2 shares of SB Ltd.

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Required:

a. What is the true cost of HB Ltd. for acquiring SB Ltd.?

b. What is the net present value of merger to HB Ltd.?

c. What is the net present value of the merger to SB Ltd.?

62. Ram Ltd. is considering the acquisition of Shyam Ltd. with stock. Relevant financial information is given below.

	Ram Ltd.	Shyam Ltd.
Present earnings	Rs.75 lakh	Rs.40 lakh
Equity (no. of shares)	40,00,000	32,00,000
EPS (Rs.)	1.875	1.25
P/E ratio	10	6

Ram Ltd. plans to offer a premium of 22% over the market price of Shyam Ltd.

a. What is the ratio of exchange of stock? How many new shares will be issued?

b. What are the earnings per share for the surviving company immediately following the merger?

c. If the price/earnings ratio stays at 10 times, what is the market price per share of the surviving company? What would happen if P/E decreases to 9?

63. Goodhealth India Ltd. (GIL), a pharmaceutical company, is planning to acquire Protex Parenterals Ltd. (PPL), another company in the same industry. The financial details of the two companies are as follows:

Details	GIL	PPL
Profit after tax	Rs.3,000 lakh	Rs.600 lakh
Market price per share (face value Rs.10)	Rs.550	Rs.100
P/E ratio	25	16

GIL wants to merge PPL with itself after acquiring it. The earnings of the merged entity are expected to be higher than the sum of earnings of the two companies by 15% and its P/E ratio is expected to be 22.

The management of GIL is offering one share of GIL for every ten shares of PPL, while the management of PPL is expecting at least two. Can a deal be struck between the two companies? Support your answer with elaborate workings.

64. Acquiring Company is considering the acquisition of Target Company in a stock-for-stock transaction in which Target Company would receive Rs.85 for each share of its common stock. The Acquiring Company does not expect any change in its price/earnings ratio multiple after the merger and chooses to value the target company conservatively by assuming no earnings growth due to synergy.

Calculate

a. The purchase price premium

b. The exchange ratio

c. The number of new shares issued by the acquiring company

d. Post-merger EPS of the combined firms

e. Pre-merger EPS of the Acquiring Company

f. Pre-merger P/E ratio

g. Post-merger share price

h. Post-merger equity ownership distribution.

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The following additional information is available

	Acquiring	Target
Earnings	Rs.2,50,000	Rs.72,500
Number of shares	1,10,000	20,000
Market price per share	Rs.52	Rs.64

Also, comment on your results.

65. Suppose, in the above problem instead of share-for-share exchange ratio, the target company agrees to an all cash purchase of 100% of its outstanding stock at Rs.85/share. Acquiring company believes that investors will apply its pre-merger P/E to determine the post-merger share price. (Assume that the Acquiring Company finances the purchase price by using cash balances on hand in excess of its normal cash requirements).

How will this affect the post-merger EPS and the post-merger share price of the firm?

Also, comment on your result.

66. The following data concerns companies ABC and XYZ

	Company ABC	Company XYZ
Earnings after taxes	Rs.1,60,000	Rs.40,000
Equity shares outstanding	16,000	5,000
Market price of the share	Rs. 75	Rs.50

Company ABC is the acquiring company, exchanging its one share for every 2 shares of XYZ Ltd. Assume that company ABC expects to have the same earnings and P/E ratios after the merger as before (no synergy effect). Show the extent of gain accruing to the shareholders of two companies as a result of merger. Are they better or worse off than they were before the merger?

67. P Ltd. wants to acquire Q Ltd. by exchanging 0.5 of its shares for each share of Q Ltd. The relevant financial data are furnished below:

	P Ltd.	Q Ltd.
Earnings after tax	Rs.9,00,000	Rs.1,80,000
Equity shares outstanding	3,00,000	90,000
Market price of the share	Rs.36	Rs.20

Calculate

a. The EPS and the P/E ratio of the firms before the merger.

b. The number of equity shares required to be issued by P Ltd. for the acquisition of Q Ltd.

c. EPS of P Ltd. after the acquisition.

d. Market price per share of P Ltd. after the acquisition, assuming its P/E multiple remains unchanged.

e. The market value of the merged firm.

68. Blue Ltd. wants to acquire Green Ltd. by exchanging its 1.5 shares for every share of Green Ltd. Blue anticipates maintaining its existing P/E ratio subsequent to the merger. The relevant financial data is given as follows:

	Blue Ltd.	Green Ltd.
Earnings After Taxes (EAT)	Rs.20,00,000	Rs.12,00,000
Number of equity shares	4,00,000	2,00,000
Market price per share	Rs.35	Rs.40

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Determine the following:

a. The exchange ratio of market prices.

b. The number of equity shares to be issued by Blue Ltd. for acquisition of Green Ltd.

c. The pre-merger EPS and the P/E ratio of each company.

d. P/E ratio used in acquiring Green Ltd.

e. EPS of Blue Ltd. after the acquisition.

f. Expected market price per share of the merged firm.

69. Quillis Ltd. is contemplating the purchase of Spark Ltd. Quills has 4,00,000 shares outstanding with Rs.50 market value per share while Spark has 2,00,000 shares selling at Rs.37.50. The EPS are Rs.6.25 for Quillis and Rs.5 for Spark.

Assume that the two managements have agreed that the shareholders of Spark Ltd. are to receive shares of Quillis in exchange for their share holding in a ratio

a. in proportion to the relative earnings per share of the two firms.

b 0.7 share of Quills Ltd. for every share of Spark Ltd. (share exchange ratio of 0.7: 1) Illustrate the impact of merger on the EPS under both the above conditions.

70. Company ABC wants to acquire CBZ. Company ABC has 2,00,000 shares outstanding with Rs.25 market value per share while Company CBZ has 1,00,000 shares selling at Rs.18.75. The EPS are Rs.3.125 for Company ABC and Rs.2.5 for Company CBZ. The two managements have agreed that the shareholders of Company CBZ will receive 0.9 share of Company ABC for one share of Company CBZ.

Illustrate the impact of the merger on the EPS. Also, compute the EPS after merger assuming that the anticipated growth rate in earnings is 8% for company ABC and 14% for CBZ. Based on the results, comment if the merger has obtained synergy?

71. "A" Ltd. is planning to acquire "B" Ltd., exchanging its shares on a one-for-one basis for Crane Industries.

The following financial statements of the two companies are provided:

	A	B
Earnings after tax	Rs.10,00,000	Rs.7,00,000
Equity shares outstanding	4,00,000	2,00,000
Earnings per share	Rs.2.5	Rs.3.50
Market price per share	Rs.35	Rs.35

You are required to calculate

a. The EPS after the merger.

b. The change in EPS for the shareholders of Companies A and B.

c. The market value of the merged firm.

d. The gain accruing to shareholders of both the firms.

72. X Industries is considering a takeover of Y industries. The following information is available

	X Industries	Y Industries
Earnings after taxes	Rs.4,00,000	Rs.1,00,000
Equity Shares outstanding	2,00,000	1,00,000

Shares of X Industries and Y Industries are currently traded at Rs.25 and Rs.12.5 respectively. The management of X Industries estimates that shareholders of Y Industries

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will accept an offer under which X Industries will offer current market value for shares of Y Industries.

a. What is the pre-merger earnings and P/E ratio of both the companies?

b. If Y Industries P/E ratio is 8, what is its current market price? What is the exchange ratio? What will X industries' post-merger EPS be?

73. Using the data from problem number 72

a. What must the exchange ratio for X industries' post-merger EPS be, to be the same as its EPS before the merger?

b. Suppose, because of Synergy effects, the management of X Industries estimates that the earnings will increase by 10%. What is the new post-merger EPS and price per share? Are the shareholders of X Ltd. better or worse off than before?

74. Assume that you are a junior in an investment banking firm and are studying the merger of two auto companies.

	Automotive Inc.	Autolative Inc.	Merged firm
Earnings per share	Rs.4.00	Rs.6	Rs.4.7
Price per share	Rs.60	Rs.45	?
Price-earnings ratio	15	7.5	?
Total earnings	Rs.5,50,000	Rs.6,00,000	?
Total market value	Rs.45,00,000	Rs.45,00,000	?

You have come to know that there is no gain from the merger. Automotive Inc. gives just enough shares to ensure the earnings per share of Rs.4.7.

a. Complete the table above.

b. What is the exchange rate of the shares?

c. How much cost is incurred by Automotive Inc. if, as a result of the merger, the synergy is Rs.35,00,000?

d. What is the impact of the merger on the total market value of the shares of Automotive Inc. that were outstanding before the merger?

75. Company X has purchased Company Y. Company Y had its base year earnings of Rs.5,00,000. At the time of merger, its shareholders received an initial payment of Rs.1,00,000 shares of Company X. The market value of the Company X's share is Rs.50 per share and P/E ratio is 10. Projected post-merger earnings of Company Y for the next four years are Rs.5,25,000, Rs.5,50,000, Rs.5,75,000, Rs.5,30,000 respectively. Assume that there are no changes in share prices and P/E ratio of Company X. Determine the number of shares required to be issued to the shareholders of Company Y, if as part of the purchase deal, M/s X issued additional shares based on yearly basis to the extent of excess earnings on the base years earnings for the coming 4 years.

76. Star Limited wants to acquire Moon Limited. The Balance sheet of Moon Ltd., as on 31st December, 2001 has the following information.

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Equity Share Capital	5,00,000	Cash	60,000
(50,000 shares of 10 each)			
Retained Earnings	2,00,000	Debtors	70,000
10% Debentures	2,00,000	Inventories	1,20,000
Creditors and other Liabilities	2,50,000	Plant and Equipment	9,00,000
	11,50,000		11,50,000

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Additional Information:

i. The shareholders of Moon Ltd. will get 2 shares in Star Ltd. for every 5 shares. The shares of Star Limited will be issued at its current price of Rs.25 per share. Debenture holders will get 12% convertible debentures in the purchasing firm for same amount. The external liabilities are expected to be settled at Rs.2,00,000. Further, it is estimated that debtors and inventories are expected to realize 1,50,000.

ii. It is expected that the cash inflows after taxes from the new machine will be Rs.3,00,000 per year for the next 6 years of useful life of the machine; the expected salvage value of the plant at the end of its useful life is 1,00,000.

iii. The firm's cost of capital is 12%

Advise the company regarding the financial feasibility of the acquisition.

77. ABC Ltd. decided to takeover the business of XYZ as at 31st December. The summarized balance sheet of XYZ Ltd. as on that date was as follows:

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)
Equity Share Capital	2,00,000	Land and Buildings	2,50,000
(10,000 shares @ 20)		Plant and Machinery	1,00,000
General Reserve	75,000	Inventories	50,000
12% Debentures	1, 20,000	Debtors	25,000
Current liabilities	40,000	Bank Balance	10,000
	4, 35,000		4,35,000

Additional information:

i. ABC is also required to pay Rs.30,000 for goodwill and is also to bear dissolution expenses of Rs.10,000.

ii. Inventories are expected to realize Rs.80,000 and expected collection from debtors are Rs.20,000.

iii. The consideration for the absorption is the discharge of debentures at a premium of 10%, taking over the liability in respect of sundry creditors and payment of Rs.12 in cash and one share of Rs.10 in ABC Ltd. at a market value of Rs.14 per share in exchange for one share in XYZ Co. Ltd.

iv. Expected cash flows after tax accruing to ABC Ltd. are Rs.2,00,000 for five years. Market value of fixed assets would be Rs.3,00,000 (Land and Buildings) and Rs.60,000 (Plant and Machinery) at the end of 5th year.

v. Cost of capital of XYZ Ltd. is 14%.

Comment on the financial soundness of ABC's management decision regarding the merger.

78. Prime Ltd. has merged into Venture Ltd. where 1 share of Venture Ltd. was exchanged for 2 shares of Prime Ltd. The balance sheets of the two companies before the merger were as follows:

(Rs. in lakh)

	Prime Ltd.	Venture Ltd.
Current assets	45	100
Fixed assets	63	150
Goodwill	0	10
Total Assets	108	260
Current liabilities	27	45
Long-term debt	18	75
Shareholders equity	63	140
Total Liabilities	108	260
No. of shares	6.3	14
Market value per share	42	35

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The fair market value of Prime Ltd.'s fixed assets is Rs.8,00,000 lakh higher than their book value. Construct the balance sheets for the company after the merger using the purchase and pooling of interest methods of accounting.

79. Switz Ltd. has merged with Sleek Ltd., where 2 shares of Sleek are exchanged for each share of Switz. The balance sheet of the two companies before the merger were as follows (in lakh):

	Switz	Sleek
Current assets	10	30
Fixed assets	12	35
Goodwill	0	5
Total Assets	22	70
Current liabilities	8	18
Long-term debt	5	20
Shareholders equity	9	32
Total Liabilities	22	70

Number of Shares 40,000	2,00,000
Market value per share Rs.40	Rs.32

The fair market value of Switz's fixed assets is Rs.5,00,000 higher than their book value. Construct the balance sheets for the company after the merger using the purchase and pooling of interests methods of accounting.

80. The following data is available for two companies, Big and Small.

Initial Balance Sheet of Big Company

(Amount in Rs.)

Debt	3,50,000	Net Working Capital	2,25,000
Equity	8,00,000	Fixed Assets	9,25,000
	11,50,000		11,50,000

Initial Balance Sheet of Small Company

(Amount in Rs.)

Debt	50,000	Net Working Capital	–
Equity	2,00,000	Fixed Assets	2,50,000
	2,50,000		2,50,000

Small Company has merged with Big Company. Big Company pays Rs.3,00,000 for Small Company. Construct the balance sheets for the company after the merger using the purchase and pooling of interests methods of accounting.

Suppose Small Company's fixed assets are re-examined and found to be worth Rs.3 lakh instead of 2.5 lakh. How would this affect the Combined Company's balance sheet under purchase accounting? How would the value of combined company change? Would your answer depend on whether the merger is taxable?

81. Estimate the H-index under the following market conditions.

a. In a market where 6 firms each held 15% market share and the remaining 10% is held by 10 firms, each with a 1% market share.

b. In a market where one firm has a 66 percent market share and the remaining 34% is held by 17 firms, each with a 2% market share.

82. Summer Enterprises is considering going private through a management buyout. Management presently owns 21 percent of the 30 lakh shares outstanding. Market price per share is Rs.15 and it is felt that a 40 percent premium over the shares' present price will be necessary to attract public stockholders to tender their shares in a cash offer. Management intends to keep their shares and to obtain senior debt equal to 80 percent of the funds

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necessary to carry out the buyout. The remaining 20 percent will come from junior subordinated debentures. Terms on senior debt are 2 percent above the prime rate, with principal reductions of 20 percent of the initial loan at the end of each of the next 5 years. The junior subordinated debentures bear a 13 percent interest rate and must be retired at the end of 6th year with a single balloon payment. The debentures have warrants attached that enable the holders to purchase 30 percent of the stock at the end of year 6. Management estimates that the earnings before interest and taxes will be Rs.100 lakh. Because of tax-loss carry forwards, the company expects to pay no taxes over the next 5 years. The company will make capital expenditures in amounts equal to its depreciation.

a. If the prime rate is expected to average 10 percent over the next 5 years, is the leveraged buyout feasible?

b. What if the prime rate is expected to average 8 percent?

c. What minimal EBIT is necessary to service the debt?

83. Sally & Co. recently has become subject to a hostile takeover attempt. The management is considering either a leveraged buyout or a leveraged recapitalization. With the LBO, it will initially own 30 percent of the stock but this would be diluted if mezzanine lenders were to exercise their warrants. These warrants upon exercise give holders 30 percent of the total shares. Management presently owns 2,00,000 shares of the 8 million shares outstanding. With a leveraged recap, it would receive 5 shares of "stub" stock for each old share owned, but no dividend, while public stockholders would receive 1 new share for each old share owned plus a large cash dividend.

What will be the management's proportion of ownership of the company, in case of LBO and in case of leveraged recap. Comment on your results.

84. Maniraj & Co. purchased Jairaj & Co. for Rs.15,50,000 with a motive of expansion. The current sales of Jairaj were Rs.50,00,000 with EBIT of Rs.4,50,000 and net income of Rs.2,00,000. Jairaj could manage to get debts amounting to Rs.9,00,000 at an interest rate of 13% from its bank. This loan was secured by the finished goods inventory and some of the assets of the company. The loan was supposed to be amortized over a five-year period. It also took a loan worth Rs.3,50,000 at 16% p.a. from a financial institution to be amortized in five years. The FI took an equity position worth Rs.70,000. The management had its equity position worth Rs.70,000. The depreciation is calculated on a straight-line basis. Life of the assets is expected to be 16 years.

Show the cash flows of the company. (Assume no growth; tax rate = 40%)

85. Mr. Rao owns 100 shares of Catalytic Software, a small software development firm. The Catalytic shares are trading at Rs.50 in the market. There are 10,000 shares outstanding, with most of those being held by small investors. Mr. Rao comes to know that a group of outside shareholders have tried to acquire 20% of the firm and are attempting a hostile takeover. They are offering Rs.75 per share for any and all outstanding shares. Analysts predict that due to the bidder's expertise at managing similar companies, the equity in the firm is expected to be worth Rs.10 lakh if the bid is successful. There are no tax effects on selling the shares.

a. Should Mr. Rao sell the shares to the bidder?

b. What does this imply about the bid price of successful takeover attempts?

86. Tractor Ltd. is deciding whether to pay-out Rs.300 thousand in excess cash in the form of an extra dividend or go in for a share repurchase. Current earnings are Rs.1.50 per share and the stock sells for Rs.15. The market value balance sheet currently is as follows:

Balance Sheet

(Rs. in thousands)

Equity	1,500	Assets other than cash	1,600
Debt	400	Cash	300
Total	1,900	Total	1,900

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a. Evaluate the two alternatives in terms of the affect on the price per share of the stock, the EPS and the P/E ratio.

b. Which alternative is a better decision for the company? Why?

87. ABC Company earned Rs.50 lakh as net income in the current year. The company has 10 lakh shares outstanding which are traded at a price of Rs.25 per share. The target pay-out ratio of the company is 40%. The company can either use the dividend amount to buy-back its shares or to pay it out as dividends. ABC is the company that believes in wealth maximization.

Determine

a. The price at which the shares can be bought back to equate the wealth of all shareholders under both the alternatives.

b. The number of shares to be bought back.

c. The impact of buy-back on EPS and expected market price after repurchase.

Assume that the P/E of the company is unaffected under both the alternatives.

88. InfoTech made an offer for share repurchase. The fraction of shares repurchased averaged 23 percent and the shareholder wealth effect was 24 percent. If the initial premium represented by the tender offer was 31 percent.

a. What was the premium of expiration price after the share repurchase?

b. What is the contribution of the tendering shareholders and the non-tendering shareholders to the wealth effect?

89. Horizon and Co. has offered to repurchase its shares. What would be the value of shares outstanding after expiration of the repurchase offer?

The following data has been provided by financial analysts of Horizon & Co.:

Price prior to the announcement of repurchase = Rs.150

Tender Price = Rs.160

Number of shares outstanding prior to the announcement = 1,00,000

Number of shares outstanding after repurchase = 70,000

Share repurchase = 20%

90. M/S Bhuvan Enterprises has reached a plateau where it finds no scope for further expansion in the business. Hence, it is tossing with the idea of either using the same for repurchase of shares at the current market price or invest it in the bond market at a yield of 15% per annum.

The financial details are as under:

Cash flow	Rs.300
Cost of capital	10%
No. of shares	100
Market Price per Share (MPS)	Rs.20
Amount to be used for share repurchase/investment in bond market	Rs.400

Evaluate which option is more beneficial to the company.

91. AB Ltd. wishes to make a tender offer for SR Ltd. SR Ltd. has 100,000 shares of common stock outstanding and earns Rs.5.50 per share. If it were combined with AB Ltd., total economies of Rs.1.5 million could be realized. Presently, the market price per share of SR Ltd. is Rs.55. AB makes a two-tier offer (i) Rs.65 per share for the first 50,001 shares tendered and (ii) Rs.50 per share for the remaining shares.

a. If successful, what will AB end up paying for SR Ltd.? How much will the stockholders of SR receive incrementally for the economies?

b. Acting independently, what will each stockholder do to maximize his wealth? What might they do if they could respond collectively as a cartel?

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92. Using the data from problem number 91.

What might happen if AB Ltd. offered Rs.65 in the first tier and only Rs.40 in the second tier?

93. Visual Infoway needs an additional capital of Rs.20,000 to undertake its expansion program. In this regard, it has decided to mobilize equity through ESOP route. Therefore, it established a shell company which in turn establishes ESOP through debt financing from Visual Infoway, the parent company. The details of ESOP outstanding are as under:

ESOP data

(Amount in Rs.)

Year	1	2	3	4
ESOP payroll	16,000	18,000	20,000	22,000
Max principal repayment (25% of payroll)	4,000	4,500	5,000	5,500

The operating income of Visual Infoway is Rs.14,000. It is expected to increase at 10% p.a. Calculate the ESOP equity at book value for all the four years when the interest is paid @ 10% p.a on the amount owed. (Consider an Income Tax Rate of 40%.)

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Part II: Solutions

1. The cost of equity is given as $k_e = R_f + \beta\,(R_m - R_f)$

Where,

k_e	=	Cost of equity capital or the rate of return
R_f	=	Rate of return required on a risk-free investment
R_m	=	Required rate of return on market
k_e	=	0.05 + 1.5 (0.10 – 0.05)
	=	0.125 x 100 = 12.5%
k_d	=	r (1 – t)
	=	0.08 x (1 – 0.4) = 4.8%

Weighted Average Cost Of Capital = Cost of Equity + Cost of Debt

$$WACC = k_e \times \frac{S}{V} + k_d \times \frac{B}{V}$$

Where,

S	=	Market value of equity
B	=	Market value of outstanding debt
V	=	B + S
	=	0.125 x 0.7 + 0.048 x 0.3
	=	0.088 + 0.014
	=	0.102 or 10.2%

Valuation of firm with no growth

$$V_0 = \frac{X_0(1-T)}{k}$$

Where,

X_0	=	Net income
T	=	Tax rate
k	=	Weighted average cost of capital
V_0	=	[4 (1 – 0.4)]/0.102
	=	2.4/0.102 = Rs.23.53 million.

2.

(Rs. in lakh)

Year	1	2	3	4	5	6	7
Asset value	20	23	26.45	30.42	33.46	36.81	39.38
Earnings	2.5	2.93	3.42	4.00	4.68	5.20	5.77
Investment	2.8	3.25	3.5	4.15	4.8	5.35	3.99
Free cash flow	–0.3	–0.33	–0.08	–0.15	–0.12	–0.15	1.78

Value of the Business = PV (Free Cash Flow) + PV(Terminal Value)

$$PV = \frac{FCF_1}{1+r} + \frac{FCF_2}{(1+r)^2} + \ldots .... + \frac{FCF_6}{(1+r)^6} + \frac{PV_T}{(1+r)^T}$$

PV of Terminal Value

$$= \frac{1.78}{(0.105-0.07)} \times \frac{1}{(1.105)^6}$$

= Rs.27.93 lakh

Present value of near-term free cash flows is

$$\frac{-0.3}{1.105} - \frac{-0.33}{(1.105)^2} - \frac{-0.08}{(1.105)^3} - \frac{-0.15}{(1.105)^4} + \frac{-0.12}{(1.105)^5} + \frac{-0.15}{(1.105)^6} = -\text{ Rs.0.86 lakh}$$

The present value of the business is – 0.86 + 27.93 = Rs.27.08 lakh.

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3. Present Value of Cash Flows during the Forecast Period

PV_{1-t} = $\{[FCFE_0 \text{ x } (1+ g_t)^t]/(1 + WACC)^t$

PV_{1-5} = $[(4 \text{ x } 1.35)/1.18] + [\{4 \text{ x } (1.35)^2\}/(1.18)^2] + [\{4 \text{ x } (1.35)^3\}/(1.18)^3] + [\{4 \text{ x } (1.35)^4\}/ (1.18)^4] + [\{4 \text{ x } (1.35)^5\}/(1.18)^5]$

= $5.4/1.18 + 7.29/(1.18)^2 + 9.84/(1.18)^3 + 13.29/(1.18)^4 + 17.93/(1.18)^5$

= 4.58 + 5.24 + 5.99 + 6.85 + 7.84

= Rs.30.50 lakh

Calculation of Terminal Value

Where,

P_n = $FCFE_n \text{ x } (1+ g)/(k_e – g)$

= (17.93 x 1.05)/0.12 – 0.05

= 18.83/0.07

= Rs.269 lakh

PV of Terminal Price

$269/(1.18)^5$ = 117.58

$P_{0, FCFE}$ = $PV_{1-5} + PV_T$

= 30.50 + 117.58 = Rs.148.08 lakh.

4. Assumptions

a. 1. Assumed that cost of equity is 15%.

2. Assumed that 30% debt repayment is done in year 2005.

i. **Computation for Tax Rate**

EBIT for the year 2000 = Rs.118.75 cr.

Interest = Rs.106.25 cr.

PBT = Rs.12.5 cr.

PAT = Rs.7.75 cr.

∴ Tax paid = Rs.4.75 cr.

∴ Tax rate = 38%

ii. **Computation for Increase in Working Capital**

Working capital for the year 2000 = Rs.17.5 cr.

Increase in 2001 = Rs.1.49 cr.

It will continue to increase @ 8.5% per annum

iii. **Cost of Capital**

Present debt = Rs.850 cr.

Interest cost = 12.5%

Equity capital = Rs.1,120 cr.

$$\therefore k_c = \frac{1,120}{1,970} \text{ x } 15 + \frac{850}{1,970} \text{ x } (12.5 \text{ x } 0.62) = 11.87\%$$

iv. As capital expenditure and depreciation are equal, they will not influence the free cash flows of the company.

v. **Computation of Free Cash Flows up to 2005**

(Rs. in crore)

Year	2001	2002	2003	2004	2005
EBIT (1 – t)	79.88	86.67	94.04	102.03	110.71
Increase in working capital	1.49	1.61	1.75	1.90	2.06
Free cash flows	78.40	85.06	92.29	100.13	–108.65
Present value of FCF (Discounted @ 11.87% per annum)	70.08	67.96	65.92	63.93	62.01

∴ Present value of FCF’s up to 2005 = Rs.329.89 cr.

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vi. **Cost of Capital beyond 2005**

Debt = Rs.595 cr.

Equity = Rs.1,120 cr.

$$k_c = \left(\frac{1,120}{1,715} \text{ x } 15\right) + \frac{595}{1,715} \text{ x } (12.5 \text{ x } 0.62) = 12.48\%$$

vii. $$\text{Continuing Value} = \frac{122.175 \text{ x } 1.05}{0.1248 - 0.05} \text{ x } \left(\frac{1}{1.1248}\right)^5$$

= Rs.952.56 cr.

∴ Value of the firm = PV of FCF up to 2005 + Continuing value – Market value of outstanding debt

329.89 + 952.56 – 595 = Rs.687.45 cr.

b. $$\therefore \text{Value per share} = \frac{687.45}{32} = \text{Rs.}21.48$$

∴ The share price is overvalued in the market place.

5. MV of Debt

$$= 1,50,000 \text{ x } \left\{\frac{(1+0.1)^5 - 1}{0.1 \text{x} (1.1)^5}\right\} + \frac{15,00,000}{(1.10)^5}$$

= 1,50,000 x $PVIFA_{(10\%, 5)}$ + 15,00,000 x $PVIF_{(10\%, 5)}$

= 1,50,000 x (3.791) + 15,00,000 x (0.621)

= 5,68,650 + 9,31,500

= Rs.15,00,150

Value of the firm to equity investors = Value of the firm – Market value of debt

= 20,00,000 – 15,00,150

= Rs.4,99,850.

6. The free cash flow formula for temporary supernormal growth followed by zero growth is given as

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

$$V_0 = X_0(1-T)(1-b_s)(1+h)\sum_{t=1}^{n}(1+h)^{t-1} + \frac{X_0(1-T)}{k}(1+h)^n(1+g_s)$$

g = r x b

Where,

r = Profitability rate and

b = Retention ratio

= 0.30 x 0.60 = 18%

Where,

1+ h = (1+g)/(1+k)

= (1 + 0.18)/(1 + 0.10) = 1.18/1.10 = 1.0727

h = 1.0727 – 1 = 0.0727

Valuation

1st term: 1,000 (1 – 0.4) (1 – 0.6) x {[1.0727 (1.0727^{10} – 1)]/0.0727}

= 240 x 15.0178

= Rs.3,604

2nd term: [1,000 (1 – 0.4)]/(0.1) x $[(1 + 0.18)/(1+ 0.10)]^{10}$ x (1.18)

= 600 x 2.017 x 1.18 = Rs.1,428

Total value of the firm = Rs.5,032.

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7. Valuation of a firm with temporary supernormal growth, followed by no growth

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

$$V_0 = X_0(1-T)(1-b_s)(1+h)\sum_{t=1}^{n}(1+h)^{t-1} + \frac{X_0(1-T)}{k}(1+h)^n\ (1+g_s)$$

1 + h = (1+g)/(1+k) = 1.30 / 1.12 = 1.1607

h = 0.1607

V_0 = (20) (1 – 0.4) (1 – 0.20) (1.1607)

$$\sum_{t=1}^{10}[(1+0.30)^t/(1+0.12)^t] + \{20(1-40)(1+0.30)^{11}\}/\ 0.12(1+0.12)^{10}$$

Current value of the firm

= 20(0.6)(0.8)(1.1607) [{(1.1607)^{10} – 1}/ 0.1607] + [(20 x 0.6 x 17.92)/(0.12 x 3.1058)]

= 11.143 x 21.395 + 215.04/0.3727

= 238.40 + 577 = Rs.815.40 lakh.

8. $$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g_c} \times \frac{(1+g_s)^{n+1}}{(1+k)^n}$$

V_0 = 238.40 + {[20 (1 – 0.40) (1 – 0.2)]/(0.12 – 0.10)} x (1 + 0.30)^{11}/(1 + 0.12)^{10}

= 238.40 + 480 x 5.77

= 238.40 + 2769.6 = Rs.3,008 lakh

Comparison of Value to After-tax Earnings Ratio

When there is no growth after supernormal growth:

$V_0/X_0(1-T)$ = 815.40/[20 (1 – 0.4)] = Rs.67.95 lakh

When there is 10% growth after supernormal growth

$V_0/X_0(1-T)$ = 3008/[20 (1 – 0.4)] = Rs.250.667 lakh.

9. a. $$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

X_0 = 19

g = 0.265

n = 5 years

b = 0.5

t = 0.30

k = 0.10

$$V_0 = 19\ (1-0.30)\ (1-0.5)\sum_{t=1}^{5}\frac{(1+0.265)^t}{(1+0.10)^t} + \frac{20(1-0.5)(1+0.265)^6}{0.10(1+0.10)^5}$$

$$V_0 = X_0(1-T)(1-b_s)(1+h)\sum_{t=1}^{n}(1+h)^{t-1} + \frac{X_0(1-T)}{k}(1+h)^n(1+g_s)$$

1+ h = (1 + g)/(1 + k)

= (1 + 0.265)/(1 + 0.10) = 1.15

h = 0.15 or 15%

= 19 x 0.7 x 0.5 (1.15) [{(1.15)^5 – 1}/0.15] + (40.977/0.161)

= 7.6475 x 6.7424 + 254.51

= 51.563 + 254.51 = 306.07

∴ Value of the firm = Rs.306.07 lakh.

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b. $g = r \times b$

$0.265 = r \times 0.5$

$r = 0.265/0.5 = 0.53$

c.

Value of the firm	= Rs.306.07 lakh
Less value of debt	= Rs.110.00 lakh
Value of equity	= Rs.196.07 lakh

10. a. When dividends are expected to grow at a uniform rate perpetually, the current market value of the share is given as $P_o = D_1/(k_e - g)$

Where,

P_o = Current market price

D_1 = Expected dividend per share

k_e = Rate of return

g = Growth in expected dividends

Here, the rate of return or the cost of equity capital can be calculated as

$k_e = R_f + \beta (R_m - R_f)$

Where,

k_e = Cost of equity capital or the rate of return

R_f = Rate of return required on a risk-free investment

R_m = Required rate of return on market

k_e = 0.07 + 1.37 (0.15 – 0.07)

= 0.07 + 0.1096

= 0.1796 or 17.96%

Current market price of the share

$P_o = [0.15 (1 + g)]/(0.1796 - g)$

As a first step, we have to estimate the growth rate in dividends

$0.10 (1 + g)^{1/4} = 0.15$

$(1 + g)^{1/4} = 1.5$

$g = 10.66\%$

Substituting the growth rate in the formula, we get

$P_0 = [0.15 (1 + 0.1066)] /(0.1796 - 0.1066)$

= 0.16599/0.073 = Rs.2.27 app.

b. With the increase in the firm's β while risk-free rate and market rate remaining constant, the rate of return changes as follows:

k_e = 0.07 + 1.5 (0.15 – 0.07)

= 0.07 + 0.12

= 0.19 or 19%

The new market price will be

$P_o = [0.15 (1 + 0.1066)]/(0.19 - 0.1066)$

= 0.16599/0.0834 = Rs.1.99 app.

Alpha could pay up to 99 lakh for Beta and earn the applicable cost of capital of 15% if the projected growth rates are realized.

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11. Firm with Temporary Supernormal Growth, followed by No Growth

$$S_0 = \sum_{t=1}^{n} \frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1+g_s)^{n+1}}{k_e(1+k_e)^n}$$

$$S_0 = \sum_{t=1}^{6} \frac{8(1+0.28)^t}{(1+0.15)^t} + \frac{20(1+0.28)^{6+1}}{0.15(1+0.15)^6}$$

$= 8\ (1.113)\ [\{(1.113)^6 - 1\}/0.113\ ] + 112.59/0.347$

= (8 x 1.113 x 7.973) + 324.47

= 70.99 + 324.47

= Rs.395.46 lakh.

12. a. Cash flows to equity = Cash flows to firm – Interest (1 – Tax rate) – Principal repaid

= 60 – 7.2 (1 – 0.36) – 0

= Rs.55.392 lakh

The present value of cash flows to equity is estimated using the cost of equity

As the cash flow is perpetuity.

PV of cash flow to equity = Cash flows to equity/Cost of equity

= 55.392/0.16

= Rs.346.2 lakh

Net present value of the project = Present value of cash flows – Equity investment

= 346.2 – 120

= Rs.226.2 lakh

b. **Firm Approach**

Computation of cost of capital (based on market value of debt and equity)

Market value of debt = 80 lakh

Market value of equity is assumed to be the present value of cash flows to equity = Rs.346.2 lakh

Weighted average cost of capital $= \frac{346.2}{426.2}(0.16) + \frac{80}{426.2}[9\%(1-0.36)]$

= 0.1299 + 0.0108

= 0.1407

= 14.07%

Present value of cash flows of firm = Cash flow to the firm/Cost of capital

= 60/0.1407

= Rs.426.44 lakh

Net present value = 426.44 – 200

= Rs.226.44 lakh

The net present values are equivalent under both approaches.

13. Cost of Equity: $k_e = R_f + \beta\ (R_m - R_f)$

= 7.5 + 0.8 (5.5)

= 11.9%

Expected growth rate = 6%

When capital expenditure and the working capital are financed by target debt ratio and the principal repayments are made from new debt issues.

FCFE = Net income + (Capital expenditure – Depreciation) (1– Debt financing ratio) + Change in working capital (1 – Debt financing ratio).

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Estimation of Free Cash Flow from Equity

Earnings per share	3.50
Add: (Capital expenditure – Depreciation)	
(1– Debt financing ratio)	
(3.4 – 2.75) (1 – 0.25)	0.48
Add: Change in working capital	
(1– Debt financing ratio) 0.55 (1 – 0.25)	0.41
FCFE	4.39

Value per share = 2.61(1.06)/(0.119 – 0.06)
= 2.766/0.059 = Rs.46.88
= Rs.47 app.

14. Cost of Equity: $k_e = R_f + \beta (R_m - R_f)$

Cost of equity in high growth period = 7.5 + 1.45 (5.5) = 15.48%

Cost of equity in stable growth period = 7.5 + 1.1 (5.5) = 13.55%

Expected growth rate during high growth period

$$= b[ROA + \frac{D}{E}\{ROA - i(1-t)\}]$$

= 0.667[12.5 +1{12.5–8.5 (1–0.36)}] = 13.04%

Pay-out ratio during stable growth period

$$= 1 - \frac{g}{[ROA + \frac{D}{E}\{ROA - i(1-t)\}]}$$

$$= 1 - \frac{0.06}{[12.5 + 1\{12.5 - 8.5(1-0.36)\}]} = 69.33\%$$

Estimation of Present Value of Dividends

Year	EPS	DPS (33.33% on EPS)	Present Value
1	30.52	10.17	8.8
2	34.5	11.54	8.6
3	39	13	8.4
4	44.1	14.7	8.3
5	49.85	16.61	8.1

Present value = $10.17/(1.1548) + 11.5/(1.1548)^2 + 13/(1.1548)^3 + 14.7/(1.1548)^4 + 16.61/(1.1548)^5$

Cumulative present value of dividends @ 15.48%

= 8.8 + 8.6 + 8.4 + 8.3 + 8.1 = Rs.42.2

Estimation of Terminal Price

Terminal price = $D_5/(k_e - g)$

Expected earnings per share = 49.85 x (1.06) = Rs.52.82

Expected dividend per share = 52.82 x 0.6933 = Rs.36.62

Terminal price = 36.62/(0.1355 – 0.06) = 36.62/0.0755 = Rs.485.16

Present value of terminal price = $485.16/(1.1548)^5$ = Rs.236.25

Cumulative present value of dividends and terminal price

P_o = 42.2 + 236.25 = Rs.278.45

Therefore, value of equity = Rs.278.45

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15. Earnings per share = Rs.3.2

Dividend per share = Rs.1.7

Depreciation = Rs.350 lakh

Capital Expenditure = Rs.475 lakh

Number of shares = 160 lakh

Market price per share = Rs.51 per share

Cost of Equity: k_e = $R_f + \beta (R_m - R_f)$

= 6.25 + 1.05 (5.5)

= 12.025%

a. Estimation of Value per Share using the Dividend Discount Model

Value of equity = $D_1/(k_e - g)$

D_1 = $D_0 (1 + g)$

Value of Equity = 1.70 (1.07)/(0.12025 – 0.07)

= 1.819/0.05025 = Rs.36.199

or Rs.36.20 app.

b. Estimation of Value per Share using the FCFE Model

FCFE = Net income + (Capital expenditure – Depreciation) (1 – Debt financing ratio) + Change in working capital (1 – Debt financing ratio)

Depreciation per share = 350/160 = Rs.2.1875

Capital expenditure per share = 475/160 = Rs.2.968

Debt financing ratio = Debt/(Debt + Equity) = 1,600/(1,600 + 8,160) = 16.39%

FCFE = 3.2 + (2.968 – 2.1875) (1 – 0.1639)

= 3.2 + (0.7805) (0.8361) = Rs.3.8525

Value of the share = 3.8525(1.07)/(0.12025 – 0.07)

= 4.122/0.05025 = Rs.82.03

c. The FCFE is greater than the dividends paid. The higher value from the model reflects the additional value from the cash accumulated in the firm. The FCFE is a more suitable model because it is a more realistic model.

16. Cash Flows to Firm

(Rs. in lakh)

Particulars	20 x 2	20 x 3	20 x 4	20 x 5	20 x 6	Terminal year
EBIT	545	594.05	647.5	705.8	769.3	800
Less Tax @ 35%	190.75	207.9	226.65	247.03	269.255	280
*Less (Cap exp – Dep)	109	118.81	129.5	141.15	153.86	–
**Less change in WC	126	137.34	149.7	163.16	177.8	86.2
= FCFE	119.25	130	141.67	154.19	168.39	433.8

***Capital Expenditure – Depreciation (increase of 9%)**

(Rs. in lakh)

Particulars	20 x 2	20 x 3	20 x 4	20 x 5	20 x 6
Capital Expenditure	327	356.43	388.5	423.47	461.58
Less Depreciation	218	237.62	259	282.32	307.72
	109	118.81	129.5	141.15	153.86

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**** Change in Working capital**

(Rs. in lakh)

Particulars	20 x 2	20 x 3	20 x 4	20 x 5	20 x 6	Terminal year
Revenues	7630	8316.7	9065.2	9881	10770	11201
Change in Revenues	630	686.7	748.5	815.8	889	431
Change in WC (20%)	126	137.34	149.7	163.16	177.8	86.2

Cost of Equity: $k_e = R_f + \beta (R_m - R_f)$

Cost of equity during the high growth phase = 7 + 1.2 (5.5) = 13.6%

Cost of capital during the high growth phase = 13.6% (0.5) + 10% (1– 0.35) (0.5)

= 6.8 + 3.25 = 10.05%.

Cost of equity during the stable growth phase = 7 + 1 (5.5) = 12.5%

Cost of capital during the stable growth phase = 12.5% (0.75) + 9% (1 – 0.35) (0.25)

= 9.375 + 1.4625 = 10.8375%

Terminal value of the firm = FCFE/k_e – g = 433.8/(0.1084 – 0.04) = 433.8/0.0684

= Rs.6,342 lakh app

Value of the firm = Present value of expected free cash flows + Present value of the terminal value

PV of free cash flow

$= 119.25/1.1005 + 130/(1.1005)^2 + 141.67/(1.1005)^3 + 154.19/(1.1005)^4 + 168.39/(1.1005)^5$

= 108.36 + 107.35 + 106.28 + 105.11 + 104.32

= Rs.531.42 lakh

Terminal value = $6342/(1.1005)^5$ = Rs.3,929 lakh

Value of the firm = 531.42 + 3929 = Rs.4,460 lakh approximately.

17. a. Cost of Equity: $k_e = R_f + \beta (R_m - R_f)$

= 7 + 0.85 (5.5) = 11.68%

Expected Growth Rate during the High Growth Period.

Return on assets = Net income/(Book value of debt + Equity)

= 30/(7.6 + 160) = 17.8%

Dividend Pay-out ratio = DPS/EPS

= 0.42/1.5 = 0.28

Retention ratio = 1 – pay-out ratio

= 1 – 0.28 = 0.72

Hence, Growth rate $= b[ROA + \frac{D}{E}\{ROA - i(1-t)\}]$

= 0.72[17.8 + 0.05{17.8 – 0.07 (1 – 0.385)}]

= 13.455%

= 13.5%

b. Pay-out ratio during stable growth period

$$= 1 - \frac{g}{[ROA + \frac{D}{E}\{ROA - i(1-t)\}]}$$

$$= 1 - \frac{0.06}{[0.125 + 0.25\{0.125 - 0.07(1 - 0.385)\}]} = 58.76\%$$

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c. Calculation of Expected Beta after 2000

New Beta = {Old Beta/{[1+ (1 – t) old D/E]} x [1+ (1 – t) New D/E ratio]}

= [0.85/ {1 + (1 – 0.385) 0.05} x 1 + (1 – 0.385) 0.25]

= 0.826 x 1.15375

= 0.95

d. **Estimation of Present Value of Dividends**

(Amount in Rs.)

Year	EPS	DPS (28% on EPS)	Present Value
1	1.70	0.48	0.430
2	1.93	0.54	0.433
3	2.19	0.61	0.438
4	2.49	0.70	0.450
5	2.83	0.79	0.455

Present value

$= 0.48/1.1168 + 0.54 / (1.1168)^2 + 0.61/(1.1168)^3 + 0.7/(1.1168)^4 + 0.79/(1.1168)^5$

Cumulative present value of dividends @ 11.68%

= 0.43 + 0.433 + 0.438 + 0.45 + 0.455

= Rs.2.206

Estimation of Terminal Price

Terminal price = $D_1/(k_e – g)$

$D_1= D_0(1 + g)$

Expected earnings per share = 2.83 x (1.06) = Rs.2.99 or Rs.3

Expected dividend per share = 3 x 0.5876 = Rs.1.7628

Capital of equity during stable growth = 7 + 0.95 (5.5) = 12.225%

Terminal price = 1.7628/(0.12225 – 0.06)= 1.7628/0.06225 = Rs.28.31

Present value of Terminal price = $28.31/(1.1168)^5$ = Rs.16.30

e. Cumulative Present Value of Dividends and Terminal Price

P_e = 2.206 + 16.30 = Rs.18.50

Therefore, value of equity = Rs.18.5

f. Value attributed to extraordinary growth = Rs.2.206

Value attributed to stable growth = Rs.16.30

18. Estimation of Cost of Equity

Cost of equity during the high growth phase = 7.5 + 1.5 (5.5) = 15.75

Cost of equity in the transition phase

Year 6	7.5 + 1.4 (5.5) = 15.2
Year 7	7.5 + 1.3 (5.5) = 14.65
Year 8	7.5 + 1.2 (5.5) = 14.1
Year 9	7.5 + 1.1 (5.5) = 13.55
Year 10	7.5 + 1.0 (5.5) = 13

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Estimation of Expected Earnings per Share, Dividends per Share and Cost of Equity for both High Growth Period and Transition Phase

(Amount in Rs.)

Period	EPS	Pay-out ratio	DPS	Cost of Equity	Present Value
1	2.48	20%	0.50	15.75%	0.432
2	3.08	20%	0.62	15.75%	0.463
3	3.82	20%	0.76	15.75%	0.490
4	4.74	20%	0.95	15.75%	0.529
5	5.80	20%	1.16	15.75%	0.558
6	7.06	30%	2.12	15.20%	0.886
7	8.18	40%	3.27	14.65%	1.191
8	9.16	50%	4.58	14.10%	1.462
9	9.89	60%	5.93	13.55%	1.662
10	10.28	70%	7.20	13.00%	1.800

Terminal Price = (10.28 x 1.04 x 0.70)/0.13 – 0.04

= 7.48/0.09 = Rs.83.11

Present value of terminal price = $83.11/(1.1575)^5$ (1.152) (1.1465) (1.141) (1.135) (1.13)

= 83.11/4.016

= Rs.20.694

Note: Since, in the transition period the costs of equity change each year, the present value has to be calculated using the cumulated cost of equity. Thus, the present value in the transition period is calculated as

Year 6 = $2.12/(1.1575)^5$ (1.152)

Year 7 = $3.27/(1.1575)^5$ (1.152) (1.1465)

Year 8 = $4.58/(1.1575)^5$ (1.152) (1.1465) (1.141)

Year 9 = $5.934/(1.1575)^5$ (1.152) (1.1465) (1.141) (1.135)

Year 10 = $7.20/(1.1575)^5$ (1.152) (1.1465) (1.141) (1.135) (1.13)

Present value of dividends in the high growth phase = 2.475

Present value of dividends in transition phase = 7

Present value of terminal price at the end of transition = 20.694

Value of the equity = Rs.30.169.

19. **Estimation of Free Cash Flows**

(Rs. in lakh)

Period	EBIT	EBIT(1–t)	Capital Expenditure	Depreciation	Capital Expenditure – Depreciation	*Change in WC	FCFF
1	156	101.4	182	149.5	32.5	19.5	49.4
2	202.8	131.82	236.6	194.35	42.25	25.35	64.22
3	263.64	171.36	307.6	252.65	54.95	32.95	83.46
4	342.27	222.47	399.8	328.45	71.35	42.85	100.27
5	445.55	289.61	519.8	426.98	92.82	55.69	141.1
6	556.94	362.01	561.38	478.22	83.16	60.28	218.57
7	668.33	434.41	606.29	535.61	70.68	60.33	303.4
8	768.57	499.57	654.79	599.88	54.91	54.29	390.37
9	845.43	549.53	707.75	671.57	35.88	41.62	472.03
10	887.7	577	764.37	752.49	11.88	22.9	542.22

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***Calculation of Change in Working Capital**

(Rs. in lakh)

Period	Revenues	Working Capital	Change in WC
0	650	65.00	–
1	845	84.50	19.5
2	1098.5	109.85	25.35
3	1428.05	142.80	32.95
4	1856.47	185.65	42.85
5	2413.4	241.34	55. 69
6	3016.25	301.62	60.28
7	3619.5	361.95	60.33
8	4162.43	416.24	54.29
9	4578.6	457.86	41.62
10	4807.6	480.76	22.90

1. Estimation of WACC

	High Growth	Transition Phase	Stable Growth
Cost of Equity	7.5 + 1.5(5.5) = 15.75%	7.5 + 1.25(5.5) = 14.375%	7.5 + 1(5.5) = 13%

2. WACC

High Growth Phase = 15.75(0.4) + 10(0.65) (0.6)

= 6.3 + 3.9 = 10.2%

Transition Phase = 14.375(0.5) + 9(0.65) (0.5)

= 7.187 + 2.925 = 10.1%

Stable phase = 13(0.6) + 8.5(0.65) (0.4)

= 7.8 + 2.21 = 10.01%

Estimation of Present Value of the Firm

$49.4/(1.102) + 64.22/(1.102)^2 + 83.46/(1.102)^3 + 100.27/(1.102)^4 + 141.1/(1.102)^5$
$+ 218.57/(1.102)^5 (1.101) + 303.4/(1.102)^5 (1.101)^2 + 390.37/(1.102)^5 (1.101)^3$
$+ 472.03/(1.102)^5 (1.101)^4 + 542.22/(1.102)^5 (1.101)^5$

= 44.83 + 52.88 + 62.37 + 67.98 + 86.83 + 122.17 + 154. 05 + 180.06 + 197.75 + 206.32

= Rs.1,175.24 lakh

Terminal Price = 542.84(1.05)/(0.1001 – 0.05)

= 569.98/0.0501 = Rs.11,376.8 lakh

Present Value of Terminal Price = $11376.8/(1.102)^5 (1.101)^5$

= 11376.8/2.628 = Rs.4,329.07 lakh

Therefore,

Present value of FCFF in high growth phase = Rs.314.89 lakh

Present value of FCFF in transition phase = Rs.860.35 lakh

Present value of terminal firm value at the end of transition = Rs.4,329.07 lakh

Value of the firm = Rs.5,504.31 lakh.

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20. Estimation of After-tax Cost of Debt, Cost of Equity and WACC

(Rs. in lakh)

Particulars	SR	AK
1. After-tax cost of debt: $k_d(1-t)$	6%	5.4%
2. Cost of equity: $k_e = R_f + \beta (R_m - R_f)$		
First 5 years	9% + 1.15 (5.5) = 15.325%	9% + 0.95 (5.5) = 14.225%
After 5 years	9% + 1 (5.5) = 14.5%	9% + 1 (5.5) = 14.5%
3. WACC – First 5 years	6 x 0.09 + 15.325 x 0.91 = 14.485%	5.4 x 0.21 + 14.225 x 0.79 = 12.374%
WACC – After 5 years	6 x 0.09 + 14.5 x 0.91 = 13.735%	5.4 x 0. 21 + 14.5 x 0.79 = 12.589%

Estimation of Projected Cash Flows for SR, AK and the Combined Firm

			Combined Firm	
Year	SR	AK	Without Synergy	With Synergy
1	464.4	4240	4704.4	4740.1
2	501.55	4494.4	4995.95	5071.91
3	541.67	4764.06	5305.73	5426.94
4	585	5049.9	5634.9	5806.83
5	631.81	5352.9	5984.71	6213.31
Terminal Value	7594.74	74061.73	81656.47	84837.13

Present Value for SR

= 464.4/(1.14485) + 501.55/(1.14485)^2 + 541.67/(1.14485)^3 + 585/ (1.14485)^4 + 631.81/(1.14485)^5 + 7594.74/ (1.14485)^5

= 405.643 + 382.658 + 360.993 + 333.245 + 321.254 + 3861.62

= Rs.5,665.42 lakh

Present Value for AK

= 4,240/ (1.1237) + 4,194.44/(1.1237)^2 + 4,764.06/(1.1237)^3 + 5,049.9/ (1.1237)^4 + 5,352.9/(1.1237)^5 + 7,4061.73/ (1.1237)^5

= 3,536.14 + 3,357.81 + 3,167.27 + 2,987.77 + 41,338.32

= Rs.58,160.56 lakh

Present value of the combined firm without synergy

= 5,665.42 + 58,160.56 = Rs.63,825.98 lakh

The cost of equity or cost of debt for the combined firm is obtained by taking the weighted averages of the individual firm's cost of equity or debt. The weights are based on the relative market values of equity or debt of the two firms.

WACC for the combined firm for the first 5 years

= [14.485 (5,665.42) + 12.374 (58,160.56)]/ 63,825.98 = 12.56%

WACC for the combined firm after 5 years

= [13.735 (5,665.42) + 12.589 (58,160.56)]/ 63,825.98 = 12.69%

Present value of the combined firm with synergy

= 4,740.1/(1.1256)+ 5,071.91/(1.1256)^2 + 5,426.94/(1.1256)^3 + 5,426.94/(1.1256)^4 + 5,806.83/(1.1256)^5 + 84,837.13 / (1.1256)^5

= 4,211.17 + 4,003.40 + 3,805.44 + 3,380.79 + 3,213.79 + 46,954.36

= Rs.65,568.95 lakh

Effect of synergy = 65,568.95 – 63,825.98 = Rs.1,742.97

Value of SR to AK = Value of SR operating independently + Value of synergy

= Rs.5,665.42 + Rs.1,742.97 = Rs.7,408.39 lakh.

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21. Estimation of After-tax Cost of Debt, Cost of Equity and WACC

Particulars	Agni	Sagar
1. After-tax cost of debt: $k_d (1-t)$	10 (1 – 0.36) = 6.4%	8 (1 – 0.36) = 5.12%
2. Cost of equity: $k_e = R_f + \beta (R_m - R_f)$		
First 3 years	7% + 1.25 (5.5) =13.875%	7% + 1 (5.5) = 12.5%
After 3 years	7% + 1 (5.5) = 12.5%	7% + 1 (5.5) = 12.5%
3. WACC – First 3 years	6.4 x 0.4 + 13.875 x 0.6 = 0.10885 = 10.885%	5.12 x 0.40 + 12.5 x 0.6 = 0.09548 = 9.55%
WACC – After 3 years	6.4 x 0.4 + 12.5 x 0.6 = 0.1006 = 10.06%	5.12 x 0. 40 + 12.5 x 0.6 = 0.09548 = 9.55%

Estimation of the Present Value

Year	FCF Agni (Rs.)	Present Value of FCF (Rs.)	FCF Sagar (Rs.)	Present Value of FCF (Rs.)
1	187.5	187.5/1.10885 = 169.09	276	276/1.0955 = 251.94
2	234.375	$234.375/(1.10885)^2$ = 190.626	317.4	$317.4/(1.0955)^2$ = 262.55
3	292.968	$292.968/(1.10885)^3$ = 214.89	365.01	$365.01/(1.0955)^3$ = 274.65
Terminal Value	8764.35	$8,764.35/(1.10885)^3$ = 6,428.38	12745.25	$12,745.25/(1.0955)^3$ = 9,694.41
Total Present Value		Rs.7,003		Rs.10,483.55

Estimation of Cost of Debt and Cost of Equity of the Combined Firm

The cost of equity or cost of debt for the combined firm is obtained by taking the weighted averages of the individual firm's cost of equity or debt. The weights are based on the relative market values of equity or debt of the two firms.

Cost of Debt of the combined firm

= [6.4 (7002.61) + 5.12 (9694.41)]/16,697

= 5.66%

Cost of Equity of the combined firm for the first three years

= 13.875 (7002.61) + 12.5 (9694.41)]/16,697

= 13.07%

Cost of Equity of the combined firm for the first three years

= 12.5 (7002.61) + 12.5 (9694.41)]/16,697

= 12.5%

WACC for first 3 years = 5.66 x 0.4 + 13.07 x 0.6 = 10.106%

WACC after 3 years = 5.66 x 0.4 + 12.5 x 0.6 = 9.764%

Value of the Combined Firm

Year	FCF Combined Firm	Present Value of FCF
1	463.5	463.5/1.106 = 421
2	551.775	$551.775/(1.106)^2$ = 451.165
3	657.978	$657.978/(1.106)^3$ = 486.38
Terminal Value	21,509.57	$21,509.57/(1.106)^3$ = 15,900

Total present value of the combined firm = Rs.17,258.

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22. $$V_0 = \frac{X(1-T)}{k}\left\{1+\frac{b(r-k)}{g-k}\left[\left(\frac{1+g}{1+k}\right)^n - 1\right]\right\}(1+g)$$

Where,

X = Net operating income

k = Cost of capital

= {(20,00,000/40,00,000) x 0.15} + {(20,00,000/40,00,000) x (0.10 x 0.5)}

= 0.1 or 10%

b = Investment opportunities per rupee after-tax cash flows = 50%

n = life = 15 years

g = growth rate = 9%

r = profitability rate after-tax = R (1 – T) = 0.3 x 0.5 = 15%

Where, R = profitability rate before tax

$$V_0 = \frac{15,00,000(1-0.5)}{0.1}\left\{1+\frac{0.5(0.15-0.10)}{0.09-0.10}\left[\left(\frac{1+0.09}{1.1}\right)^{15} - 1\right]\right\}(1+0.09)$$

= 75,00,000 {1 + (– 2.5) x (–0.128)} (1.09)

= Rs.1,07,91,000

23. According to the Miller-Modigliani approach

$$V_0 = \frac{X(1-T)}{k}\left\{1+\frac{b(r-k)}{g-k}\left[\left(\frac{1+g}{1+k}\right)^n - 1\right]\right\}(1+g)$$

Where,

X = Net operating income = 120,000 x 1.20 = Rs.1,44,000

k = Cost of capital = 12%

T = tax rate = 40%

b = Investment opportunities per rupee after-tax cash flows = 72,000/86,400 = 0.8333

n = life = 15 years

g = growth rate = 20%

r = profitability rate after-tax = R (1 – T)

= (1,44,000 x 0.6 – 1,20,000 x 0.6)/1,00,000

= 0.144

$$V_0 = \frac{1,20,000(1-0.4)}{0.12}\left\{1+\frac{0.8333(0.144-0.12)}{0.2-0.12}\left[\left(\frac{1+0.2}{1+0.12}\right)^{15} - 1\right]\right\}(1+0.20)$$

= 6,00,000 {1 + 0.25 x 1.815} (1.2) = Rs.10,46,700

24. According to the Rappaport approach

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^n}{k(1+k)^n}$$

$$V_0 = 1,20,000(1-0.4)(1-0.8333)\sum_{t=1}^{n}\frac{(1+0.2)^5}{(1+0.12)^5} + \frac{1,20,000(1-0.4)(1+0.2)^5}{0.12(1+0.12)^5}$$

$$= 72,000 \times 0.1677 \times 1.071\left(\frac{0.409}{0.071}\right) + \frac{72,000}{0.12} \times 1.412$$

= 74,494 + 8,47,200 = Rs.9,21,694.

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25. According to the Stern model

Value of the firm = Value of supernormal growth period + Value at the end of growth period discounted to present,

which is given as

$$V_0 = FCF_1\left(\frac{FVIFA_{(h\%,n)}}{1+k}\right) + NOPAT_1\left(\frac{FVIF_{(h\%,n)}}{k}\right)$$

Where,

FCF $= X_1(1 - T)(1 - b)$

NOPAT $= X_1(1 - T)$

$1 + h = (1+g)/(1+k) = (1+0.25)/(1+0.15) = 1.087$

$h = 1.087 - 1 = 0.087$

$V_0 = [20,00,000(1+0.25)(1-0.4)(1-0.5)\{FVIFA_{(8.7\%,\ 10yrs)}/(1+0.15)\}]$
$+ [20,00,000(1+0.25)(1-0.4)\{FVIF_{(8.7\%,10yrs)}/(0.15)\}]$

$= 20,00,000(1.25)(0.6)(0.5)(1.15)$
$FVIFA_{(8.7\%,\ 10yrs)} + 20,00,000(1.25)(0.6)(0.15)\ FVIF_{(8.7\%,\ 10yrs)}$

$= 1,29,17,751 + 5,18,176$

$=$ Rs.1,34,35,927

26.

$$V_0 = R_0[m(1-T) + d_S - I_{CE1} - I_{WC1}]\sum_{t=1}^{n}\frac{(1+g_S)^t}{(1+k_S)^t} + \frac{R_0(1+g_S)^n[m(1-T)+d_C-I_{CE2}-I_{WC2}]}{(1+k_S)^n} x \frac{(1+g_C)}{(k_C-g_C)}$$

$$V_0 = R_0[m(1-T) + d_S - I_{CE1} - I_{WC1}]h\left[\frac{h^n-1}{h-1}\right] + R_0[m(1-T)+d_C-I_{CE2}-I_{WC2}]h^n x \frac{(1+g_C)}{(k_C-g_C)}$$

$h = (1+g_s)/(1+k_s)$

$= 1.15/1.11 = 1.036$

$$V_0 = 10[0.15(1-0.4) + 0.05 - 0.09\ (-0.04)\ 1.036\left[\frac{1.036^5-1}{0.036}\right] + 10[0.15(1-0.4)] + 0.03 - 0.05\ (-0.01)\ 1.036^5 x \frac{(1+0.04)}{(0.12-0.04)}$$

$= 10(0.01) \times 5.5667 + 10(0.06) \times 15.5142$

$= 0.5567 + 9.3085$

$=$ Rs.9.8652 lakh

Present value of supernormal cash flows	= 0.5567
Present value of terminal value	= 9.3085
Total present value of future cash flows	= 9.8652
Add: Marketable securities	1.5000
Total value of the firm	= 11.3652
Less: Interest bearing debt	= 2.0000
Equity value	= Rs.9.3652

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27. Estimation of Growth Rate for the First 4 Years

Before Restructuring

$g = b\,[ROA + D/E\,\{ROA - I\,(1 - t)\}]$

$= 0.5[0.10 + 0.20\,\{0.10 - 0.09\,(1 - 0.35)\}]$

$= 5.41\%$

After Restructuring

$g = b\,[ROA + D/E\,\{ROA - I\,(1 - t)\}]$

$= 0.75[0.18 + 1\,\{0.18 - 0.10\,(1 - 0.35)\}]$

$= 22.125\%$

Estimation of Cost of Equity for the First 4 Years

Before Restructuring

$k_e = R_f + \beta\,(R_m - R_f)$

$= 7.5 + 0.9\,(5.5)$

$= 12.45\%$

After Restructuring

$k_e = R_f + \beta\,(R_m - R_f)$

$= 7.5 + 1.3\,(5.5)$

$= 14.65\%$

Cost of Equity after 4 Years

$k_e = R_f + \beta\,(R_m - R_f)$

$= 7.5 + 1\,(5.5)$

$= 13\%$

Price per share before restructuring

$$= \frac{10(0.5)(1.0541)\left(1 - \dfrac{(1.0541)^4}{(1.1245)^4}\right)}{0.1245 - 0.0541} + \frac{10(0.5)(1.0541)^4(1.07)}{(0.13 - 0.07)(1.1245)^4}$$

$= 17.054 + 68.87 = \text{Rs.}85.924$

Price per share after restructuring

$$= \frac{10(0.25)(1.22125)\left(1 - \dfrac{(1.22125)^4}{(1.1465)^4}\right)}{0.1465 - 0.22125} + \frac{10(0.5)(1.22125)^4 1.07}{(0.13 - 0.07)(1.1465)^4}$$

$= 11.729 + 114.86 = \text{Rs.}126.59$

Increase in price because of restructuring

$= \text{Rs.}126.59 - 85.924 = \text{Rs.}40.67$ approximately.

28. Price of the share at the end of the third year

$$= \frac{20 \text{ x } 1.15^4}{0.25 - 0.15} = \frac{34.98}{0.10} = \text{Rs.}349.80$$

Price of the share at the end of the fourth year

$$= \frac{20 \text{ x } 1.15^5}{0.25 - 0.15} = \frac{40.23}{0.10} = \text{Rs.}402.30$$

Return from the debenture can be calculated by solving the following equation for 'k':

$$\frac{100}{(1+k)} + \frac{100}{(1+k)^2} + \frac{100}{(1+k)^3} + \frac{349.80 \text{ x } 5}{(1+k)^3} + \frac{50}{(1+k)^4} + \frac{402.30 \text{ x } 5}{(1+k)^4} = 1{,}000$$

k = 53.03% by trial and error.

As the return from the debenture is higher than the required return, the investor may invest in this debenture.

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29. a. Value of optionally fully convertible debenture

= Higher of (Conversion value, Straight value) + Option value

Conversion value = 175 x 10 = 1,750

Straight value $= \frac{120}{1.15} + \frac{120}{1.15^2} + \frac{120 + 1,000}{1.15^3}$

= 104.35 + 90.74 + 736.42

= Rs.931.51

Intrinsic worth = Higher of (1,750 or 931.50) + Option value

= Rs.1,750 (excluding option value)

Market price = Intrinsic value (1.10)

= 1,750 (1.10)

= Rs.1,925.

b. The company should make the call, as it will be gaining at least Rs.725 per debenture.

c. Current market price = [Higher of (750 or 931.51)]1.10

= 931.51(1.1) = Rs.1,024.66

The company should not make the call, as buying the debentures from the market will be cheaper.

30. Equity represents a call option on the assets of the firm with an exercise price equal to the redemption value of bonds. Thus, value of equity based on binomial model is

C = S + B

Where,

C is the value of equity as a call option

Δ is the number of shares in the portfolio

whose pay-off is identical to that of a call option

S is the current market value = Rs.200 crore

B is the market value of debt in the portfolio

whose pay-off is identical to that of a call option.

$$\Delta = \frac{C_u - C_d}{S(u - d)}$$

Where,

u = 1.25

C_u = Max (uS – E, 0)

= Max (1.25 x 200 – 175, 0)

= Rs.75 crore

d = 0.75

C_d = Max (dS – E, 0)

= Max (0.75 x 200 – 175, 0)

= 0

$$\Delta = \frac{75 - 0}{200 \text{ x } (1.25 - 0.75)} = \frac{75}{100}$$

= Rs.0.75 crore

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$$B = \frac{uC_d - dC_u}{R(u-d)}$$

$$= \frac{1.25 \times 0 - 0.75 \times 75}{1.09 \times (1.25 - 0.75)} = \frac{-56.25}{0.545}$$

= Rs.(103.21) crore

$C = \Delta S + B$

= 0.75 x 200 – 103.21

= Rs.46.79 crore.

31. A warrant is a call option on the equity of the company. That is, each warrant is a call option on one share of the company.

Value of the Option

$$d_1 = \frac{\ln\left(\frac{S_0}{E}\right) + \left(r + \frac{\sigma^2}{2}\right)t}{\sigma\sqrt{t}}$$

$$= \frac{\ln\left(\frac{20}{22}\right) + \left(0.15 + \frac{1}{2}0.0625\right)1}{0.25\sqrt{1}}$$

$$= \frac{-0.0953 + 0.0001}{0.25} = 0.3438$$

$d_2 = d_1 - \sigma\sqrt{t}$

= 0.3438 – 0.25

= 0.0938

$N(d_1) = N(0.3438) = 0.6331$

$N(d_2) = N(0.0938) = 0.5359$

$$C_o = S_0 N(d_1) - \frac{E}{e^{rt}} N(d_2)$$

$$= 20 \times 0.6331 - \frac{22}{e^{0.15 \times 1}} \times 0.5359 = \text{Rs.}2.514$$

∴ Value of Warrant = Rs.2.514

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32. Average of price to EBDIT = $\frac{20 + 19 + 22}{3} = 20.33$

Value of TFL based on price to EBDIT = 20.33 x 20 = Rs.406.67 lakh

Average of price to book value = $\frac{4 + 3 + 2}{3} = 3$

Value of TFL based on price to book value

= 3 x 75 = Rs.225 lakh

Average of price to sales = $\frac{4 + 3 + 5}{3} = 4$

Value of TFL based on price to sale

= 4 x 500 = Rs.2,000 lakh.

Average value of

TFL = $\frac{406.67 + 225 + 2000}{3}$ = Rs.877.22 lakh.

33. Since, the three companies A, B and C are similar to W in most of the aspects, the average multiples can be taken as the proxies to determine the market value of W.

The averages can be calculated as below

Market value/Revenues = (1.2 + 1+ 0.8) x 1/3 = 1

Market value/Book = (1.3 + 1.2 + 2) x 1/3 = 1.5

Market value/Net income = (20 + 15 + 25) x 1/3 = 20

Estimation of Ratios

	A	B	C	Average
Market/Revenue	1.2	1.0	0.8	1.0
Market/Book	1.3	1.2	2	1.5
Market/Net income	20	15	25	20

Application of Valuation Ratios to Company W

	Data (lakh)	Average M. Ratio	Indicated value of equity (lakh)
Revenues	100	1.0	100
BV of equity	60	1.5	90
Net income	5	20	100

Average = 1/3 x (100 + 90 + 100) = Rs.97 lakh

Therefore, value of firm W = Rs.97 lakh.

34. **Estimation of Ratios**

	SK	AS	Average
a. Market value/Book value	1.125	1.333	1.229
b. Market value/Replacement cost	0.75	0.727	0.7385
c. Market value to sales	0.818	0.888	0.853
d. Market to after tax EBIT	25	25	25

Application of Ratios of SK and AS to XY

	XY (Rs.)	Average (Rs.)	Indicated Value of Equity XY (Rs.)
Revenues	500	0.853	426.5
BV to Equity	250	1.229	307.25
Net income	14	25	350
Replacement cost	500	0.7385	369.25
		Average	363.25

Market Value of XY Co. Ltd. according to comparable company method = Rs.363.25

35. Current Dividend Pay-out ratio = 70%

Expected growth rate in earnings and dividends = 6%

Cost of Equity = 7% + 0.80 (5.5) = 11.4%

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i. P/E = Pay-out ratio $(1+g)/(k_e - g)$

$= 0.70\ (1+ 0.06)/(0.114 - 0.06)$

$= 0.742/0.054 = 13.74$

ii. P/BV = [ROE x Pay-out ratio $(1+g)]/k_e - g$

$= 0.15 \times 0.70 \times 1.06/(0.114 - 0.06)$

$= 0.1114/0.054 = 2.061$

iii. P/Sales = [Profit margin x Pay-out ratio x $(1+g)]/(k_e - g)]$

Net profit margin = Net income/Revenues

Earnings per share = Rs.40

Revenues per share = 8,50,000/1,000 = Rs.850

Net profit margin = 40/850

= 0.47 or 4.7%

P/S = [0.047 x 0.70 x 1.06]/(0.114 – 0.06) = 0.0348/0.054 = 0.644

36. **Estimation of Value of Equity**

	Old Mgt	New Mgt
Return on assets	10%	16%
Debt/Equity ratio	0%	40%
Interest rate on debt	–	%
Detention ratio	40%	0%
Growth rate – first five years	4%	11.7%
Growth rate after 5 years	5%	7%
Pay-out ratio after 5 years	60%	60%
Beta of the stock	0.80	0.992
Cost of equity	11.4	12.456
Value of equity per share	Rs.21.6	Rs.25.34

Calculation of Growth Rate for the First Five Years

g = b [ROA + D/E {ROA – i (1 –t)}]

Incumbent Management

g = 0.4 (10% + 0) = 4%

Under New Management

0.6 {16% + 0.4 (16% – 9%)}= 11.3%

Beta of the Stock under New Management

New Beta = {Old Beta/[1+ (1 – t) Old D/E]} x {1 + (1 – t) New D/E ratio}

= 0.8/[1 + (1 – 0.4) 0] x {1 + (1 – 0.4) 0.4}

= 0.8 x 1.24 = 0.992

Cost of Equity $k_e = R_f + \beta\ (R_m - R_f)$

Under Present Management = 0.07 + 0.8 (0.125 – 0.07) = 11.4%

Under New Management = 0.07 + 0.992 (0.125 – 0.07) = 12.456%

After year 5 = 0.07 + 1 (0.125 – 0.07) = 0.125 or 12.5%

Value of Equity Share

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Price per share under the present management

$$= \frac{[2 \times 0.6 \times 1.04 \{1 - (1.04)^5/(1.114)^5\}]}{0.114 - 0.04} + \frac{2 \times 0.6 \times (1.04)^5 \times 1.06}{(0.125 - 0.06)(1.114)^5}$$

= Rs.18.78

Price per share under the new management

$$= \frac{[2 \times 0.4 \times 1.113 \times \{1 - (1.113)^5/(1.1246)^3\}]}{0.1246 - 0.04} + \frac{2 \times 0.6 \times (1.113)^5 \times 1.07}{(0.125 - 0.07)(1.1246)^5}$$

= Rs.22.70

Therefore, increase in price because of change in control

= 22.70 – 18.78 = Rs.3.92 or Value of control = Rs.3.92.

37. Unlevered Beta for the firms in the same industry = β/[1 + (1 – t) (D/E)]

= 1.8/(1 + 0.64 x 0.35) = 1.47

Debt equity ratio of the private firm's debt

= 4.5/(2x4) = 0.5625

Where,

4.5, 4 and 2 are private firm's debt, book value of equity, and the ratio of market value to book value for similar firms.

Levered Beta for the private firm = 1.47 x (1 + 0.64 x 0.5625) = 1.999 or 2 approximately

Cost of equity for the private firm = 7 + 2 x 5.5 = 18%

After-tax cost of debt = 0.10 x (1 – 0.36) = 0.064 or 6.4%

Weighted average cost of capital for the firm

= 18 x (2 x 4)/(2 x 4 + 4.5) + 6.4 x 4.5/(2 x 4 + 4.5)

= 11.52 + 2.304

= 13.82%

Valuation of the Business using the Free Cash Flow to Firm Model

Year	1	2	3	4	5
EBIT (in lakh)	3,30,000	3,96,000	4,75,200	5,70,240	6,04,454
EBIT (1– tax rate)	2,11,200	2,53,440	3,04,128	3,64,954	3,86,851
Less: Capital expenditure – Depreciation*	24,000	28,800	34,560	41,472	0
	1,87,200	2,24,640	2,69,568	3,23,482	3,86,851

Terminal value = Rs.3,86,851/(0.1382 – 0.06)

= Rs.49,46,944

Present value of FCFF = 1,87,200/(1.1382) + 2,24,640/$(1.1382)^2$ + 2,69,568/$(1.1382)^3$ + 3,23,482/$(1.1382)^4$ + 49,46,944/$(1.1382)^4$

= 1,64,470 + 1,73,400 + 1,82,815 + 1,92,742 + 29,47,560 = Rs.36,60,987

Value of equity = MV of the firm – MV of debt

= Rs.36,61,093 – 4,50,000 = Rs.32,11,093

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*** Estimation of Capital Expenditure – Depreciation**

Particulars	1	2	3	4	5
Capital Expenditure	60,000	72,000	86,400	1,03,680	0
Less: Depreciation	36,000	43,200	51,840	62,208	0
	24,000	28,800	34,560	41,472	0

38. $IOR = \frac{I_R}{[(P/E)_{TV} x NI_{TV}]/(1+i)^n}$

Where,

IOR = Investor's required ownership percentage

I_R = Required initial investment in rupees

$(P/E)_{TV}$ = Projected price/earnings ratio for terminal value

NI_{TV} = Terminal year's net income

i = Cost of capital of the venture capitalist

Therefore,

Ownership Position = $50,00,000/\{(50,00,000 \text{ x } 40)/(1+0.4)^8\}$

= 50,00,000/1,35,52,155

= 0.37 approximately.

Comment: The venture capitalist will demand a 37% share of equity in the start-up business in exchange for Rs.50 lakh. Higher discount rate would result in a larger share of owner's equity demanded by the venture capitalist.

39. Present value of merged entity = 25,00,000 + 16,00,000 + 4,00,000 – 80,000 = Rs.44,20,000

Premium paid on the present value = 18,25,000 – 16,00,000 = Rs.2,25,000

Maximum value of synergies=44,20,000 – (25,00,000 + 16,00,000) – 2,25,000=Rs.95,000.

40. Present value of the merged entity

= 20 + 12 + 3 – 0.40 = Rs.34.6 crore

Premium paid on the present value of KEL

= 14 – 12 = Rs.2 crore

Maximum value of the synergies

= 34.6 – (20 + 12) – 2

= Rs.0.60 crore.

41. Let the present value of Star Ltd., Moon Ltd. and the merged firm be represented as P_A, P_B and P_{AB} respectively.

PV_A = Rs.75 lakh

PV_B = Rs.20 lakh

PV_{AB} = Rs.125 lakh

Cash = Rs.28 lakh

Benefit = $PV_{AB} – (PV_A + PV_B)$

= 125 – (75 + 20) = 125 – 95

= Rs.30 lakh

Cost = Cash – PV_B

= 28 lakh – Rs.20 lakh

= Rs.8 lakh

NPV to Star = Benefit – Cost

= Rs.30 – Rs.8 lakh

= Rs.22 lakh

NPV to Moon = Cash – PV_B

= Rs.28 lakh – Rs.20 lakh = Rs.8 lakh.

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42. a. Let the value of the combined firm be represented as PV_{AB} and the value of the two separate firms be represented as PV_A and PV_B.

Gain is the difference between the value of the combined firm and the sum of the values of two individual firms. It is given as

Gain $= PV_{AB} - (PV_A + PV_B)$

P_A = Rs.200 lakh, P_B = Rs.50 lakh and

Gain = Rs.25 lakh

Gain $= PV_{AB} - (PV_A + PV_B)$

25 $= PV_{AB} - (200 + 50)$

PV_{AB} = Rs.275 lakh

b. Cost of the Merger = Cash paid $- P_B$

= 65 – 50 = Rs.15 lakh

c. NPV to B's shareholders = The gain of B's shareholders is the cost of firm A i.e., Rs.15 lakh. This means, of the 25 lakh gain, firm B has captured 15 lakh.

d. NPV to A's shareholders = Overall gain from the merger less that part of the gain captured by B's shareholders.

= 25 – 15 = 10 lakh.

43. Apparent cost of acquiring Night Ltd.

= Rs.2,46,000 x 65 – Rs.1,50,00,000

= Rs.1,59,90,000 – Rs.1,50,00,000 = Rs.9,90,000

True cost when shareholders of Night Ltd. get a fraction of the share capital of the combined entity will be:

Cost = $\alpha\, PV_{AB} - PV_B$

The share of Night Ltd. in the combined entity will be $\frac{2,46,000}{8,00,000 + 2,46,000} = 0.235$

PV_{AB} = $PV_A + PV_B$ + Benefit

= Rs.520 lakh + Rs.150 lakh +Rs.120 lakh

= Rs.790 lakh

Cost = $\alpha\, PV_{AB} - PV_B$

= 0.235 x 790 – 150

= Rs.36 lakh

NPV to Day Ltd. = Benefit – Cost

= 120 – 36 = Rs.84 lakh

NPV to Night Ltd. = Cost = Rs.36 lakh

44. a. Rate of return (k_e) required by the investors of Starlight Company

$k_e = (D_1/P_s) + g$

$= \frac{1.00}{15} + 0.07$

= 0.1367 or 13.67%

If g = 8% then $P_{S1} = \frac{1.00 \times 1.08}{0.1367 - 0.08}$

= Rs.19.04

Benefit of acquisition = PV of Starlight with merger – PV of Starlight without merger

$= (P_{S1} - P_S)\, N_S$

Where,

N_S = Number of shares of Starlight outstanding

= (19.04 – 15) x 2,00,000 = Rs.80,95,238

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b. Cost of Acquisition to Al Hasan

i. If it pays Rs.17 cash compensation

= Cash compensation – PV_S

= (17 x 20,00,000) – (15 x 20,00,000)

= Rs.340 lakh – Rs.300 lakh

= Rs.40 lakh

ii. If Al Hasan offers one share for every 3 shares of Starlight, then the share of Starlight (α) in the combined entity will be

$$\alpha = \frac{\frac{1}{3}(20,00,000)}{60,00,000 + \frac{1}{3}(20,00,000)}$$

= 0.10

PV_{AS} = $PV_A + PV_S$ + PV (Benefit of Merger)

= 2,880 + 300 + 80.95

= Rs.3,260.95 lakh

Cost of acquisition to Al Hasan given the exchange ratio

= $\alpha\, PV_{AS} - PV_S$

= 0.10 x 3,260.95 – 300

= 326.095 – 300

= Rs.26.095 lakh.

45. Price earnings ratio of Alpha Ltd. and Beta Ltd. are given below:

Price earning ratio of Alpha Ltd. = $\frac{25}{8}$ = 3.125

Price earning ratio of Beta Ltd. = $\frac{10}{1.75}$ = 5.714

Earnings = EPS x No. of shares

Earnings of Alpha Ltd. = 8 x 7,000 = Rs.56,000

Earnings of Beta Ltd. = 1.75 x 3,000 = Rs.5,250

Price earning ratio of the combined entity

$$= \frac{W_1 (P/E)_A + W_2 (P/E)_B}{W_1 + W_2}$$

Where,

W_1 = Proportion of Alpha Ltd.'s earnings to total earning of the combined entity = $\frac{56}{61.25}$

W_2 = Proportion of Beta Ltd.'s earnings to total earnings of the combined entity

= $\frac{5.25}{61.25}$ outstanding

Therefore,

$$P/E = \frac{\left(\frac{56}{61.25}\right) x\, 3.125 + \left(\frac{5.25}{61.25}\right) x\, 5.714}{\left(\frac{56}{61.25} + \frac{5.25}{61.26}\right)} = 3.35$$

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46. Let the value of ABC and XYZ be represented as PV_A and PV_B and the value of the combined firm PV_{AB}.

a. Gain from the Merger

Gain from the merger = Reduction of costs due to the merger

ABC estimates that by combining the two companies, it will reduce marketing and administration costs by Rs.50,000 per year perpetually.

Cost of capital = 10%

Hence, PV of gain = 50,000/0.10

= Rs.5,00,000

b. Cost of the Cash Offer = Cash paid – PV_B

= 14,00,000 – 10,00,000 = Rs.4,00,000

c. Cost of the Stock Alternative

When the sellers receive N shares worth P_{AB}, the cost is given as

Cost = N x P_{AB} – PV_B

Here, 50% of the combined firm value is paid as stock

Combined firm value PV_{AB} = Gain + (PV_A + PV_B)

= 5,00,000 + (20,00,000 + 10,00,000)

= Rs.35,00,000

Hence, value of stock offered = 0.50 x 35,00,000 = 17,50,000

Cost = 17,50,000 – 10,00,000

= Rs.7,50,000.

47. a. NPV of acquisition under the cash offer for Firm A

NPV = Wealth with merger – Wealth without merger

= (PV_{AB} – Cash) – PV_A

= (35,00,000 – 14,00,000) – 20,00,000

= 21,00,000 – 20,00,000

= Rs.1,00,000

b. NPV under the Stock Offer for Firm A

NPV = (PV_{AB} – Stock) – PV_A

= (35,00,000 – 17,50,000) – 20,00,000

= 17,50,000 – 20,00,000

= Rs.(2,50,000)

Under the stock offer, the NPV is negative.

48. a. Cost of the Cash Offer if Y's Market Price Reflects only its Value as a Separate Entity

Cost = Cash paid – PV_Y

= 70,00,000 – 40,00,000

= Rs.30,00,000

b. Y's share price has risen by Rs.4 because of rumor that Y might get a favorable merger offer, means that the market is overstated by 4 x 2,00,000 = Rs.8,00,000

Hence, the true value of Y i.e., PV_Y is only 40,00,000 – 8,00,000 = Rs.32,00,000

Then, Cost = Cash Paid – PV_Y

= 70,00,000 – 32,00,000

= Rs.38,00,000 lakh

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c. Cost of stock offer = $N_x P_{XY} - PV_Y$

X offers 1,25,000 shares instead of Rs.70 lakh in cash. X's share price before the deal is announced was Rs.60. If Y is worth 40 lakh stand alone (i.e. Y's share price has not risen on merger rumors and accurately reflects Y's stand alone value) the cost of the merger appears to be

Apparent cost = 1,25,000 x 60 – 40,00,000

= 75,00,000 – 40,00,000

= Rs.35,00,000

d. The new firm will have 6,00,000 + 1,25,000 = 7,25,000 shares

PV_{XY} = Gain + ($PV_X + PV_Y$)

= 20,00,000 + (3,60,00,000 + 40,00,000)

= Rs.4,20,00,000

New share price = 4,20,00,000/7,25,000

= Rs.57.93

True Cost = 1,25,000 x 57.93 – 40,00,000

= 72,41,250 – 40,00,000

= Rs.32,41,250.

49. a. The shareholders of Sun Pharma would not like their existing EPS to go down. So, the computation of Breakeven Exchange Ratio is as follows:

Without Synergy

$$\text{Rs.11} = \frac{EPS_s\ N_s + EPS_A\ N_A}{N_s + ER(N_A)}$$

$$EPS_S = \frac{200}{18.18} = \text{Rs.11}$$

$$\text{Rs.11} = \frac{\text{Rs.11 x 200 lakh + Rs.2 x 20 lakh}}{\text{200 lakh} + ER(N_A)20}$$

$$EPS_A = \frac{24}{12} = \text{Rs.2}$$

$$ER = \left(\frac{11 \text{ x } 200 + 2 \text{ x } 20}{11} - 200\right) \text{x} \frac{1}{20}$$

= 0.182

$$N_S = \frac{2,200}{11} = \text{Rs.200 lakh}$$

$$N_A = \frac{40}{2} = \text{Rs.20 lakh}$$

With Synergy

$$\text{Rs.11} = \frac{EPS_S\ N_S + EPS_A\ N_A\ (1.03)}{N_S + ER(N_A)}$$

$$ER = \left(\frac{2,307.2}{11} - 200\right) \text{x} \frac{1}{20} = 0.487$$

So, ER acceptable to Sun Pharma = 0.5 x 0.182 + 0.5 x 0.487 = 0.335

So, ABT's demand for an ER of 0.4 will not be acceptable to Sun Pharma.

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b. Projected EPS of merged entity = $\frac{EPS_S\ N_S + EPS_A\ N_A\ (l+g)}{N_S + ER(N_A)}$

'g' of merged entity = $\frac{200 \text{ x } 9 + 20 \text{ x } 5}{200+20}$ = 8.64%

Projected EPS = $\frac{11 \text{ x } 200 + 2 \text{ x } 20\,(1.0864)}{200+8}$ = Rs.10.79

EPS without merger = 11(1.09) = Rs.11.99

Dilution = $\frac{11.99 - 10.79}{11.99}$ = 10%

The shareholders of Sun Pharma will never be able to wipe off the dilution since the 'g' of the merged entity is lower than the pre-merger growth rate. So, only if the prediction of synergy works and 'g' earnings growth rate increases beyond 9%, then only shareholders can hope for wiping off the dilution of share value.

50. a. The perpetual growth model of stock valuation is used to find the appropriate discount rate (r) for the common stock of Unicast Co.

1.8/(r – 0.11) = 100

or, r = 0.128

Gain from acquisition = PV_{AB} – (PV_A + PV_B)

= Rs.3,000,000,000 – (2,000,000,000 + 500,000,000)

= Rs.50,00,00,000

b. Since the consideration is paid in cash,

Cost = Cash – PV_B

= 150(5,000,000) – 500,000,000

= Rs.250,000,000

c. Because this is financed with stock, we have to take into consideration the affect of the merger in the stock price of A. After the merger, there will be 11,666,667 (i.e., 10,00,000 + 1,666,667) shares outstanding, and, hence, the share price will be:

3,000,000,000/11,666,667 = 257

Therefore, Cost = (257) (1,666,667) – (100) (5,000,000)

= Rs.71.7 million.

51. a. If the growth rate is not affected by the takeover, the cost of the acquisition will remain the same if it is for cash i.e. Rs.250,000,000.

In case of an acquisition by stocks, we have a new cost as the new growth rate affects the value of the merged company, which, in turn affects the stock price of the merged company and, hence, the cost of the merger. It follows that:

PV_{AB} = (200) (10,000,000) + (100) (5,000,000)

PV_{AB} = 2,50,00,00,000

Now, the new share price will be

250,000,000/11,666,667 = Rs.214.29

And Cost = (214.29) (1666, 667) – (100) (5,000,000)

Cost = Rs.142.8 million

b. Taking the above case where the value of the acquiring firm is Rs.500 million and the value of the combined firm is Rs.3,000 million and supposing the probability of the merger taking place is 70%. Then the value of the firm pre-merger could be:

0.3 x 500 + 0.7 x 3,000 = Rs.2,250 million

This is an underestimation to the correct value of the acquisition.

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52. PV of Cash Flows before Merger @ 14% Discount Rate

CF	80	92	100	112	120	
PV	70.18	70.79	67.50	66.31	62.32	+ 825.80

825.80 is obtained in the following manner.

$$\frac{120 \text{ x } (1.06)}{0.14-0.06} \text{ x } \frac{1}{(0.14)^5} = 825.80$$

Sum of PV's of cash flows = Rs.1,162.90 lakh

PV of Cash Flows after the Merger

CF	100	112	125	127	138	
PV	87.72	86.18	84.37	75.19	71.67	+ 1,095.57

1,095.57 is obtained in the following way

$$\left(\frac{138 \text{ x } 1.07}{0.14-0.07}\right) \text{ x } \frac{1}{(0.14)^5} = 1,095.57$$

Sum of PV's of cash flows = Rs.1,500.71 lakh

Ownership position of shareholders of HR Ltd. in the combined firm

$$= \frac{10,00,000}{10,00,000+2,00,000}$$

$$= \frac{10,00,000}{12,00,000} = 0.83$$

Calculation of the NPV of the merger proposal from the point of view of the shareholders of HR Ltd.

$NPV_{(HR\ Ltd.)}$ = (0.83) 1,500.71 – 1,162.90
= 1,245.59 – 1,162.90
= Rs.82.69 lakh.

53. a. In the absence of any information regarding P/E or pay-out ratio, the following model may be used for valuation of the firm.

$$\frac{FCF\,(1+g)}{k-g}$$

Value of Metro Ltd. $= \frac{1,500 \text{ x } 1.05}{0.08-0.05}$

= Rs.52,500 million

Value of Regency Ltd. $= \frac{720 \text{ x } 1.07}{0.09-0.07}$

= Rs.38,520 million

b. Value of both firms without synergy = 52,500 + 38,520 = Rs.91,020 million

c. Weighted average cost of capital

$$= 8\% \text{ x } \frac{52,500}{91,020} + 9\% \text{ x } \frac{38,520}{91,020} = 8.42\%$$

Expected growth $= 5\% \text{ x } \frac{52,500}{91,020} + 7\% \text{ x } \frac{38,520}{91,020} = 5.84\%$

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d. Value of Synergy

Scenario I

(Rs. in million)

Reserves	9,000
Cost of goods sold (48% of reserves)	4,320
EBIT	4,680
PAT	2,808
Cost of Capital	8.42%
g	5.84%

$$\text{Value} = \frac{2{,}700\ (1.0584)}{0.0842 - 0.0584}$$

= Rs.1,10,763 million

∴ Value of synergy = 1,10,763 – 91,020 = 19,743 million

Scenario II

(Rs. in million)

Reserves	9,000
Cost of goods sold	5,400
EBIT	3,600
PAT	2,160
Cost of capital	8.42%
g	7.0%

$$\text{Value} = \frac{2{,}160\ (1.07)}{0.0842 - 0.07} = \text{Rs.}1{,}62{,}760 \text{ million}$$

∴ Synergy value = 1,62,760 – 91,020

= Rs.71,740 million.

54. a. Value of the Firms before the Merger

Calculation of Free Cash Flow to each of the Firm

Free cash flow to AB = EBIT (1 – tax rate)

= 20,000 (1 – 0.4) = Rs.12,000

Free cash flow to CD = EBIT (1 – tax rate)

= 16,000 (1 – 0.4) = Rs.9,600

Value of the two firms independently

Value of the firm = [FCF (1 + g)]/(k – g)

Value of AB = [12,000 (1.06)]/(0.10 – 0.06) = Rs.3,18,000

Value of CD = [9,600 (1.08)]/(0.12 – 0.08) = Rs.2,59,200

In the absence of synergy the combined firm value is:

Combined Firm Value with No Synergy = 3,18,000 + 2,59,200

= Rs.5,77,200

b. **Value of the Firm with Synergy**

On combining the two firms the cost of goods sold is reduced from 70% to 65% of revenues.

The revenue of the combined firm = 80,000 + 40,000 = Rs.1,20,000

Cost of goods sold = 65% of revenues = 0.65 x 1,20,000 = Rs.78,000

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Weighted average cost of capital for the combined firm

= 10% [3,18,000/5,77,200] + 12% [2,59,200/5,77,200]

= 0.0551 + 0.0539 = 0.109

or 11% approximately

Weighted average expected growth rate for the combined firm

= 6% [3,18,000/5,77,200] + 8% [2,59,200/5,77,200]

= 0.033 + 0.0359 = 0.0689

or 7% approximately

Estimation of Free Cash Flow

(Amount in Rs.)

	Firm with No Synergy	Firm with Synergy
Revenues	1, 20,000	1, 20,000
Cost of goods sold	84,000	78,000
EBIT	36,000	42,000
Growth rate	7%	7%
Cost of capital	11%	11%
FCF = EBIT (1 – t)	36,000 (1 – 0.4) = 21,600	42,000 (1 – 0.4) = 25,200

Value of the Firm without Synergy

= [21,600 (1.07)]/0.11– 0.07 = Rs.5,77,800

Value of the Firm with Synergy

= [25,200 (1.07)]/0.11 – 0.07 = Rs.6,74,100

55. a. **Calculation of the maximum price to be paid by Sheraton under the current management**

Value while operating under old management	Rs.320 lakh
Add Present Value of Synergy	Rs.60 lakh
	Rs.380 lakh
Less: Outstanding Debt	Rs.110 lakh
Value of Equity	Rs.270 lakh

Maximum price to be paid by Sheraton = 270/5 = Rs.54

b. **Calculation of the maximum price to be paid by Sheraton under the changed management**

Value while operating under new management	Rs.450 lakh
Add Present Value of Synergy	Rs.60 lakh
	Rs.510 lakh
Less: Outstanding Debt	Rs.110 lakh
Value of Equity	Rs.400 lakh

Maximum price to be paid by Sheraton = 400/5 = Rs.80

56. If Sheraton owns 5.25% of the outstanding shares i.e. 26,250 (= 5,00,000 x 0.0525) shares, then they need to buy the remaining 4,73,750.

The equity is worth Rs.400 lakh.

The value of equity of already existing shares = 26,250 x 55 = Rs.14,43,750

Sheraton is now faced with the mutually exclusive choices of buying the remaining shares or selling their current stake. The best way to handle this is to realize that there is an

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opportunity cost to not selling the current stake, so the net value of the remaining equity to Sheraton will be

4,00,00,000 – 14,43,750 = Rs.3,85,56,250.

Share price to be willing to pay = 385,56,250/4,73,750 = Rs.81.38.

57. Present Value of Cash Flows

(Amount in Rs.)

Year	Cash Flow	Discount Rate	Present Value
1	(1,00,000)	$1.20^1 = 1.2$	(83,333)
2	(5,00,000)	$1.20^2 = 1.44$	(3,47,222)
3	5,00,000	$1.20^3 = 1.7280$	2,89,351
4	10,00,000	$1.20^4 = 2.0736$	4,82,253
5	15,00,000	$1.20^5 = 2.4883$	6,02,821
		Total	9,43,870

Sum of present value = 9,43,870

PV of terminal value = {(15,00,000 x 1.05)/(0.10 – 0.05)}/2.4883

= 3,15,00,000/2.4883 = Rs.126,59,245

Minimum price = 9,43,870 + 1,26,59,245

= Rs.1,36,03,115.

Maximum price = 1,36,03,115 + 30,00,000

= Rs.1,66,03,115.

58. Post-merger EPS = $E_{AB}/[N_A + N_B \text{ x } (P_A/P_B)]$

E_{AB} = Sum of the current earnings of the target and acquiring companies + Any increase in earnings due to synergy

N_A = Acquiring company's outstanding shares

N_B = Number of target company's outstanding shares

P_A = Price offered for the target company

P_B = Current price of the acquiring company's stock

Combined earnings E_{AB} = Earnings + Synergy

= 9,00,000 + 1,00,000 = Rs.10,00,000

Total Number of Shares

N_A = 20,000 shares

$N_B \text{ x } (P_A/P_B)$ = 10,000 x (40/80) = 5,000

Total shares = 20,000 + 5,000 = 25,000

Post-merger EPS = 10,00,000/25,000 = Rs.40.

59. Let the exchange ratio be 'r'

Then, $2.75 = \frac{2.25 \text{ x } 1,50,000 + 2.25 \text{ x } 1,50,000}{1,50,000 + r \text{ x } 1,50,000}$

$2.75 = \frac{3,37,500 + 3,37,500}{1,50,000 + (1,50,000r)}$

2.75 (1,50,000 + 1,50,000r) = 6,75,000

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$4,12,500 + 4,12,500r = 6,75,000$

$4,12,500r = 2,62,500$

$$r = \frac{2,62,500}{4,12,500} = \frac{7}{11}.$$

60. Define EPS_R, EPS_o and EPS_{RO} as the earnings per share of Ramya International, Overseas Corporation and the combined entity respectively. Define ER as the desired exchange ratio.

Given EPS = Rs.3.50 . . (1)

By definition, $EPS_{Ro} = \frac{EPS_R\ N_R + EPS_o\ N_o}{N_R + ER(N_o)}$ . . (2)

Where, N_R and N_O denote the outstanding shares of Ramya International and Overseas Corporation respectively.

Combining equations (1) and (2), we get

$$\frac{EPS_R\ N_R + EPS_o\ N_o}{N_R + ER(N_o)} = 3.50$$

$$= \frac{2.50\,(1,50,000) + 2.5(1,50,000)}{1,50,000 + ER\,(1,50,000)} = 3.50$$

= 3,75,000 + 3,75,000=3.50 (1,50,000 + ER (1,50,000)=7,50,000 = 5,25,000 + 5,25,000 ER

5,25,000 ER = 2,25,000

$$ER = \frac{2,25,000}{5,25,000} = \frac{3}{7} = 0.428$$

Therefore, the exchange ratio to be adopted for increasing the post-merger earning per share of the combined entity to Rs.3.50 will be 0.428. Stated differently, 3 shares of Ramya International for every 7 shares of Overseas Corporation to attain the targeted EPS of Rs.3.50 on takeover.

61. a. True Cost $= \alpha PV_{HS} - PV_{SB}$

Where,

α is the exchange ratio

$PV_{HS} = PV_{HB} + PV_{SB}$ + Benefit

= (3,50,000 x 75) + (2,75,000 x 35) + 45,00,000

= Rs.403.75 lakh

$$\alpha = \frac{1,37,500}{(3,50,000 + 1,37,500)}$$

= 0.28

PV_{SB} = 2,75,000 x 35

= Rs.96,25,000

True Cost = (0.28 x 403.75) – (96.25) = Rs.16.8 lakh

b. NPV of the merger to HB Ltd.

= Benefit of merger – Cost of merger

= Rs.45 lakh – Rs.16.8 lakh

= Rs.28.2 lakh

c. NPV of the merger to SB Ltd.

= Cost of the merger to M/s. HB Ltd.

= Rs.16.8 lakh.

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62. Estimation of MPS

	Ram Ltd.	Shyam Ltd.
EPS (Rs.)	1.875	1.25
P/E ratio	10	6
Market price per share (= EPS x P/E ratio)	18.75	7.5

Shareholders of Shyam Ltd. are offered 7.5 x 1.22 = 9.15 per share in the shares of Ram Ltd.

a. Exchange ratio $= \frac{9.15}{18.75}$

= 0.488 (rounded off to 0.5)

Number of new shares issued $= 32,00,000 \times \frac{1}{2}$

= 16,00,000 shares

b. Earnings of surviving company = 75 + 40 = Rs.115 lakh

Equity (shares) = 40 + 16 = Rs.56 lakh

EPS = 115/56 = Rs.2.05

There is an increase in EPS as the company that is acquired has a low P/E ratio.

c. Market price per share when P/E = 10

= 2.05 x 10 = Rs.20.53

Market price per share when P/E = 9 = 2.05 x 9 = Rs.18.48

In the first case, share price rises from 18.75 to 20.53 due to the increase in EPS. In the second instance it falls owing to decrease in P/E ratio.

63. Maximum exchange ratio acceptable to shareholders of GIL:

$$ER_1 = \frac{-S_1}{S_2} + \frac{(E_1 + E_2)PE_{12}}{P_1 S_2}$$

$$S_1 = \frac{3,000 \times 25}{550} = 136.36 \text{ lakh}$$

$$S_2 = \frac{600 \times 16}{100} = 96 \text{ lakh}$$

$$ER_1 = \frac{-136.36}{96} + \frac{3,600 \times 1.15 \times 22}{550 \times 96}$$

$$= -1.42 + 1.73 = 0.31$$

∴ GIL can give a maximum number of 31 shares for every 100 shares of PPL.

Minimum exchange ratio acceptable to shareholders of PPL:

$$ER_2 = \frac{P_2 S_1}{PE_{12}(E_1 + E_2) - P_2 S_2}$$

$$= \frac{100 \times 136.36}{22 \times 3,600 \times 1.15 - 100 \times 96}$$

$$= \frac{13,636}{91,080 - 9,600}$$

$$= \frac{13,636}{81,480} = 0.167 \cong 0.17$$

∴ Shareholders of PPL can accept a minimum number of 17 shares of GIL for every 100 shares of PPL.

As the maximum exchange ratio acceptable to the shareholders of GIL is greater than the minimum exchange ratio acceptable to the shareholders of PPL, there is a scope of bargain.

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64. a. Purchase price premium = Offer price for Target Company stock/Target Company market price per share

= 85/64 = 1.328 or 33% approximately

b. Exchange ratio = Price per share offered for Target Company/Market price per share for the acquiring company

= 85/52 = 1.6

Acquiring company issues 1.6 shares of stock for each share of Target Company's stock.

c. New shares issued by acquiring company

= Shares of Target Company x Exchange ratio

= 20,000 x 1.6 = 32,000

d. Post-merger EPS of the combined companies

= Combined earnings/Total number of shares.

Combined earnings = (2,50,000 + 72,500) = Rs.3,22,500

Total shares outstanding of the new company = 1,10,000 + 32,000 = 1,42,000

Post-merger EPS = 3,22,500/1,42,000 = Rs.2.271

e. Pre-merger EPS of the acquiring company = Earnings/Number of shares

= 2,50,000/1,10,000 = Rs.2.273

f. Pre-merger P/E = Pre-merger market price per share/Pre-merger earnings per share

= 52/2.273 = 22.87

g. Post-merger share price = Post-merger EPS x Pre-merger P/E

= 2.271 x 22.87 = Rs.51.94 (as compared to Rs.52 pre-merger)

h. Post-merger Equity Ownership Distribution

Target Company = Number of new shares/ Total number of shares

= 32,000/1,42,000 = 0.2253 or 22.53%

Acquiring company = 100 – 22.53 = 77.47%.

Comment: The acquisition results in an Rs.0.06 reduction in the market price of the acquiring company due to a 0.002 decline in the EPS of the combined companies. Whether the acquisition is a poor decision depends upon what happens to the earnings of the combined companies over time. If the combined earnings grow more rapidly than the acquiring company's earnings would have in the absence of the acquisition, the acquisition may contribute to the market value of the acquiring company.

65. Post-merger EPS of the combined companies = Combined earnings/Total number of shares

Combined earnings = (2,50,000 + 72,500) = Rs.3,22,500

Total shares outstanding of the new company = 1,10,000

Post-merger EPS = 3,22,500/1,10,000 = 2.93

Post-merger share price = Post-merger EPS x Pre-merger P/E

Pre-merger P/E = Pre-merger price per share/Pre- merger earnings per share

= 52/2.273 = 22.87

Post-merger share price = 2.93 x 22.87 = Rs.67 (as compared to Rs.52)

Comment: The all cash acquisition results in a Rs.15 increase in the share price of the combined companies. This is a result of a 0.658 improvement in the EPS of the combined companies as compared to the 2.273 pre-merger EPS of the acquiring company. In practice, the improvement in EPS would not have been as dramatic, if the earnings of the combined companies had been reduced by accrued interest on the excess cash balances of the acquirer or by interest expense if the acquirer had chosen to finance the transaction using debt.

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66. Company ABC exchanges one share for every two shares of XYZ.

Hence, number of shares exchanged for 5,000 shares will be 2,500 shares (i.e.5,000/2)

EPS after the merger = (1,60,000 + 40,000)/16,000 + 2,500

= 2,00,000/18,500 = Rs.10.8

Market price after the merger = EPS x P/E

= Rs.10.8 x 7.5 = Rs.81.08

Total market value = Rs.81.08 x 18,500 = Rs.14,99,980

i. Gain from the Merger

Post-merger market value of the firm		Rs.14,99,980
Less: Pre-merger market value		
Company ABC (16,000 x 75)	12,00,000	
Company XYZ (5,000 x 50)	2, 50,000	
		Rs.49,980

ii. Apportionment of Gains

	Post-merger	Pre-merger	Difference
Shareholders of Firm ABC	12,97,280 (16,000 x 81.08)	12,00,000 (16,000 x 75)	Rs.97,280
Shareholders of Firm XYZ	2,02,700 (2,500 x 81.08)	2,50,000 (5,000 x 50)	Rs.(47,300)

Hence, shareholders of ABC are better off after the merger and shareholders of XYZ are worse off.

67. a. EPS and P/E before the Merger

	P Ltd.	Q Ltd.
EPS (EAT/ # of shares)	9,00,000/3,00,000 = Rs.3	1,80,000/90,000 = Rs.2
P/E (MPS/EPS)	36 /3 = 12 times	20 / 2 = 10 times

b. Number of equity shares required to be issued by P Ltd. for acquisition of Q Ltd.

90,000 shares of Q Ltd. x 0.5 exchange ratio = 45,000 shares

c. EPS of P Ltd. after the acquisition

(9,00,000 + 1,80,000)/(3,00,000 + 45,000) = Rs.3.13 approximately

d. Expected market price per share of P Ltd. after the acquisition, assuming its P/E multiple remains unchanged = EPS x P/E

= 3.13 x 12 = Rs.37.56

e. Market value of the merged firm = 37.56 x 3,45,000 = Rs.1,29,58,200

68. a. Exchange ratio of market prices

= (Market price of 1.5 shares of Blue Ltd./Market price of 1 share of Green Ltd.)

= (1.5 x 35)/40 = 1.3125

b. Number of equity shares required to be issued by Blue Ltd. for acquisition of Green Ltd.

2,00,000 shares of Green Ltd. x 1.5 exchange ratio = 3,00,000 shares

c. EPS and P/E before the Merger

	Blue Ltd.	Green Ltd.
EPS(EAT/No. of shares)	20,00,000/4,00,000 = Rs.5	12,00,000/2,00,000 = Rs.6
P/E (MPS/ EPS)	35/5 = 7 times	40/6 = 6.67 times

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d. Implied P/E ratio in acquisition of Green Ltd.:

Market price of shares of Blue Ltd./Current EPS of Green Ltd. = 52.5/6 = 8.75 times

(Market price of shares of Blue Ltd. = 1.5 x 35 = 52.5)

e. EPS of Blue Ltd. after the merger

= (20,00,000 + 12,00,000)/(4,00,000 + 3,00,000) = Rs.4.57 approximately.

f. Expected market price after merger = 4.57 x 7 = Rs.32

69. a. i. **Merger Effect on EPS (Exchange ratio in proportion to relative EPS)**

(Amount in Rs.)

Company	Original number of shares	EPS	Total earnings after taxes
Quillis	4,00,000	6.25	25,00,000
Spark	2,00,000	5	10,00,000
Total post-merger earnings			35,00,000

Number of shares issued to shareholders of Spark Ltd.

= 2,00,000 x (5/6.25) = 1,60,000

ii. Total Number of shares after the merger

= 4,00,000 + 1,60,000 = 5,60,000

iii. Earnings per share for Quillis after the merger

= 35,00,000/5,60,000 = Rs.6.25

iv. Equivalent Earnings per Share for Spark Ltd. Shareholders

EPS before the merger

= (EPS before the merger 5)/(exchange ratio 0.8) = Rs.6.25

EPS after the merger = Rs.6.25.

b. i. **Merger Effect on EPS (exchange ratio 0.7: 1)**

(Amount in Rs.)

Company	Original number of shares	EPS	Total earnings after taxes
Quillis	4, 00,000	6.25	25, 00,000
Spark	2, 00,000	5	10, 00,000
Total post-merger earnings			35, 00,000

Number of shares issued to shareholders of Spark Ltd.

= 2,00,000 x 0.7 = 1,40,000

ii. Total Number of shares after the merger

4,00,000 + 1,40,000 = 5,40,000

iii. EPS = 35,00,000/5,40,000 = Rs.6.48

iv. Quillis Shareholders

EPS before the merger	6.25
EPS after the merger	6.48
Accretion in EPS	Rs.0.23

v. Spark Shareholders

Equivalent EPS before the merger

EPS before the merger/Share exchange ratio	7.142
EPS after the merger	6.48
Dilution in EPS	Rs.(0.662)

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70. i. **Merger Effect on EPS (exchange ratio 0.9: 1)**

(Amount in Rs.)

Company	Original number of shares	EPS	Total earnings after taxes
ABC	2,00,000	3.125	6,25,000
CBZ	1,00,000	2.500	2,50,000
Total post-merger earnings			8,75,000

ii. Number of shares after the merger

= 2,00,000 + 90,000 i.e. (0.9 x 1,00,000)

= 2,90,000

iii. EPS = 8,75,000/2,90,000 = Rs.3.017

iv. Company ABC Shareholders

EPS before the merger	3.125
EPS after the merger	3.017
Dilution in EPS	(Rs.0.108)

v. CBZ Shareholders

Equivalent EPS before the merger

EPS before the merger/Share exchange ratio	Rs.2.778
EPS after the merger	Rs.3.017
Accretion in EPS	Re.0.239

Projections of Earnings per Share

(Amount in Rs.)

Year	Post-merger earnings				Pre-merger earnings		Accretion (Dilution) in EPS	
	ABC (8%)	CBZ (14%)	Total earnings	Combined EPS	ABC	CBZ	ABC	CBZ
I	II	III	IV (ABC+CBZ)	V (IV/2,90,000)	VI (II/2,00,000)	VII III/90,000*	VIII	IX
1.	6,25,000	2,50,000	8,75,000	3.02	3.13	2.78	(0.11)	0.24
2.	6,75,000	2,85,000	9,60,000	3.31	3.38	3.17	(0.07)	0.14
3.	7,29,000	3,24,900	10,53,900	3.63	3.65	3.61	(0.02)	0.02
4.	7,87,320	3,70,386	11,57,706	3.99	3.94	4.11	0.05	(0.12)
5.	8,50,306	4,22,240	12,72,546	4.39	4.25	4.69	0.14	(0.30)
6.	9,18,330	4,81,354	13,99,684	4.83	4.59	5.35	0.24	(0.52)

Note: * 0.9 x 1,00,000 shares of company B = 90,000 equivalent shares in Company A. Hence, number of pre-merger shares is taken as 90,000.

There was no synergy in the initial 3 years but, as time passed synergy is obtained.

71. a. EPS subsequent to the merger = Total earnings after tax/Number of shares

The number of shares issued to shareholders of company B = 2,00,000 i.e., one share for every share.

Hence, total number of shares = 2,00,000 + 4,00,000 = 6,00,000

EPS = (7,00,000 + 10,00,000)/6,00,000 = Rs.2.833 approximately.

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b. Change in EPS for the Shareholders of Companies A and B

Shareholders of Company A

EPS before the merger	2.5
EPS after the merger	2.833
Increase in EPS	0.333

Shareholders of Company B

EPS before the merger	3.5
EPS after the merger	2.833
Decrease in EPS	0.667

c. Market Value of Post-merged Firm

Market value = MPS x Number of shares

MPS = P/E ratio x EPS

= 14 x 2.833 = Rs.39.662

Market value = 39.662 x 6,00,000

= Rs.2,37,97,200

d. Gain Accruing to Shareholders of both the Firms (Exchange ratio 1:1)

Firm A

Post-merger market value (4,00,000 x 39.662)	1,58,64,800
Less: Pre-merger market value (4,00,000 x 35)	1,40,00,000
Gain	Rs.18,64,800

Firm B

Post-merger market value (2,00,000 x 39.662)	79,32,400
Less: Per-merger market value (2,00,000 x 35)	70,00,000
Gain	Rs.9,32,400

72. a. **Pre-merger Earnings per Share and P/E Ratio**

	X Ltd.	Y Ltd.
Pre-merger earnings/share	4,00,000/2,00,000 = Rs.2	1,00,000/1,00,000 = Re.1
P/E ratio	MPS/EPS = 25/2 = 12.5	12.5/1 = 12.5 times

b. If Y Ltd.'s P/E ratio is 8, than the current market price

MPS = EPS x P/E ratio = 1 x 8 = 8

Estimation of Exchange Ratio

Since X Ltd. offers current market value for Y Ltd., the exchange ratio will be

Market price per share of X Ltd./Market price per share of Y Ltd.

= 25/8 = Rs.3.125

Post-merger EPS = Total earnings/Number of shares after the merger

Total earnings = 4,00,000 + 1,00,000 = Rs.5,00,000

Number of shares issued to shareholders of Y Ltd. = 1,00,000/3.125 = 32,000

Number of shares = 2,00,000 + 32,000 = 2,32,000

EPS = 5,00,000/2,32,000 = 2.155

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73. a. EPS before the merger = 2

EPS = Total earnings/Number of shares

2 = 5,00,000/Number of shares

Number of shares = 2,50,000

Therefore, for the post-merger EPS to be the same as pre-merger EPS, 50,000 shares have to be issued to the shareholders of Y Ltd.

Exchange ratio = 50,000/1,00,000 = 0.5

b. New Earnings = 1.1 x 5,00,000 = Rs.5,50,000

Post-merger EPS = 5,50,000/2,32,000 = Rs.2.37

Market Price = EPS x PE = 2.37 x 8 = Rs.18.96

Pre-merger value for shareholders of firm X

= 2,00,000 x 25 = Rs.50,00,000

Post-merger value for shareholders of firm X = 2,00,000 x 18.96 = Rs.37,92,000

The shareholders of X Ltd. are better off prior to the merger.

74. a. Total market value = Rs.45,00,000 + Rs.45,00,000 = Rs.90,00,000

Total earnings = 5,50,000 + 6,00,000 = Rs.11,50,000

Earnings per share is Rs.4.7

Therefore, the number of shares outstanding = 11,50,000/4.7 = 2,44,680

The price per share is Rs.36.78 i.e., (90,00,000/2,44,680)

P/E ratio = 7.83 i.e., (36.78/4.7)

b. Automotive Inc. had issued 1,07,180 (2,44,680 – 1,37,500) new shares in order to takeover Autolative Inc. which had 1,00,000 shares outstanding.

No. of shares of Automotive Inc. = (5,50,000/400) = 1,37,500.

Thus, 1.072 i.e., (1,07,180/1,00,000) shares of Automotive Inc. were exchanged for each share of Autolative Inc.

c. Automotive paid a total of Rs.39,42,080 i.e., (1,07,180 x 36.78) for something that was worth Rs.35,00,000.

Thus, the cost is Rs.4,42,080 i.e., (39,42,080 – 35,00,000).

d. The market value of Automotive Inc. will drop by Rs.4,42,080.

75. According to the Base Period Earn-out Method under the deferred payment plan, the shareholders of the target firm are to receive additional shares for a specified number of future years, if the firm is able to improve its earnings in comparison with the earnings of the base period. The basis for determining the required number of shares to be issued is given as

$$\frac{\text{Excess Earnings x P/E Ratio}}{\text{Share Price (Acquiring firm)}}$$

Year 1 (25,000 x 10)/50 = 5,000

Year 2 (50,000 x 10)/50 = 10,000

Year 3 (75,000 x 10)/50 = 15,000

Year 4 (30,000 x 10)/50 = 6,000

Thus, the shareholders of company Y will receive total 1,36,000 shares

(1,00,000 shares + 36,000 in subsequent years.

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76. i. **Cost of Acquisition**

(Amount in Rs.)

Share Capital (20,000 x 25)	5,00,000
12% Convertible debentures	2,00,000
Payment required for settlement of external liabilities	2,00,000
Less: Cash realized from acquired assets	– 1,50,000
Cash of Moon Ltd.	– 60,000
	6,90,000

ii. **Cash Inflows**

(Amount in Rs.)

Cash flow after tax for five years i.e., t (1 to 5)	3,00,000
Cash flow in the sixth year t = 6 (i.e. 3, 00,000 + 1, 00,000)	4,00,000

iii. **Determination of Net Present Value**

(Amount in Rs.)

Year	Cash flows	PV factor at 12%	Total PV
1- 5	3,00,000	3.605	10,81,500
6	4,00,000	0.507	2,02,800
			12,84,300
Less: Cost of Acquisition			6,90,000
Net Present Value			5,94,300

Since, the net present value is positive, Star Limited is expected to benefit from the merger with Moon Limited.

77. **Cost of Acquisition (Payment Basis)**

(Amount in Rs.)

Debentures		1,32,000
Current liabilities		40,000
Cash 12 x 10,000		1,20,000
Shares 14 x 10,000		1,40,000
Payment of goodwill		30,000
Dissolution expenses*		10,000
		4,72,000
Less: Realization of assets		
Inventories	80,000	
Debtors	20,000	
Bank balance	10,000	
	1,10,000	
Cost of Acquisition		3,62,000

* When dissolution expenses are paid by the target company they should be ignored.

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Determination of NPV

(Amount in Rs.)

Year	Cash Flows	PV Factor at 14%	Total PV
1-5	2,00,000	3.433	6,86,600
Add: PV of realization of fixed assets [3,60,000/(1.14)^5]			1,87,023
			8,73,623
Less: Cost of Acquisition			3,62,000
			5,11,623

Since the net present value is positive, the acquisition is feasible.

78. Balance Sheet of the Combined Entity after Merger under the Pooling and Purchase Method

	Pooling Method	Purchase Method (Rs. in lakh)
Current assets	145	145
Fixed assets	213	221
Goodwill	10	49.25
Total assets	368	415.25
Current liabilities	72	72
Long-term debt	93	93
Shareholder equity	203	250.25
Total	368	415.25

Purchase consideration = 3.15 x 35 = Rs.110.25 lakh

Where, 3.15 is the number of new shares issued

Net assets taken over = (45 + 71) – 45

= Rs.71 lakh

Goodwill = Purchase consideration – Net assets taken over

= 110.25 – 71 = Rs.39.25 lakh.

79. With the exchange ratio of 2, Sleek would issue 80,000 shares of stock with a market value of 32 x 80,000 = 25,60,000 for the stock of Switz. This exceeds the net worth of Switz by Rs.11,60,000 i.e. 25,60,000 – [27,00,000 – (8,00,000 + 5,00,000)]. With the purchase method, Switz fixed assets will be written up by Rs.5,00,000 and goodwill of Sleek by Rs.11,60,000. The balance sheet after the merger under the two methods of accounting is:

(Amount in Rs.)

	Purchase	Pooling of interests
Current assets	40	40
Fixed assets	52	47
Goodwill	16.6	5
Total	108.6	92
Current liabilities	26	26
Long-term debt	25	25
Shareholders equity	57.6	41
	108.6	92

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80. Balance Sheet under the Pooling of Interest Method of the Combined Company

(Amount in Rs.)

Debt Equity	4,00,000 10,00,000	Net working capital Fixed assets	2,25,000 11,75,000
	14,00,000		14,00,000

Balance Sheet under the Purchase Accounting Method of the Combined Company

Big Company Pays Rs.3,00,000 for Small Company. Hence, equity is increased by 1 lakh.

(Amount in Rs.)

Debt Equity	4,00,000 11,00,000	Net working capital Fixed assets Goodwill	2,25,000 11,75,000 1,00,000
	15,00,000		15,00,000

Balance Sheet under Purchase Accounting when Fixed Assets of Small Company are Revalued

(Amount in Rs.)

Debt Equity	4,00,000 11,00,000	Net working capital Fixed assets Goodwill	2,25,000 12,25,000 50,000
	15,00,000		15,00,000

81. The Herfindahl index (H-index) registers a concern about inequality of firms as well as the degree of concentration of industry.

a. H-index $= 6\,(15)^2 + 10\,(1)^2$

$= 1{,}360$

b. H-index $= (66)^2 + 17(2)^2$

$= 4{,}424$

A high H-index indicates that one or more firms have relatively high market shares.

82. a. Shares owned by outsiders = 30,00,000 x 0.79 = 23,70,000

Price to be offered = 15 x 1.40 = Rs.21 per share

Total buyout amount = 23,70,000 x 21 = Rs.4,97,70,000

Senior debt = 4,97,70,000 x 0.80 = Rs.3,98,16,000

Annual principal payment = 3,98,16,000/5 = Rs.79,63,200

Junior debt = 4,97,70,000 x 0.20 = Rs.99,54,000

Annual EBIT to Service Debt

(Amount in Rs.)

Senior debt interest Senior debt principal Junior debt interest	= 398,16,000 x 0.12 = = = 99,54,000 x 0.13 =	47,77,920 79,63,200 12,94,020
		1,40,35,140

Hence, during the first 5 years, EBIT of 100 lakh will not be sufficient to service the debt.

b. **Annual EBIT to Service Debt when the Prime Rate is Averaged to 8 Percent**

(Amount in Rs.)

Senior debt interest Senior debt principal Junior debt interest	= 398,16,000 x 0.10 = = = 99,54,000 x 0.13 =	39,81,600 79,63,200 12,94,020
		1,32,38,820

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Still, expected EBIT will not be sufficient to service the debt.

c. The minimal EBIT required to service the debt at 10 percent prime rate will be Rs.1,40,35,140

83. i. Management's proportion of ownership of the company in case of LBO

= 30% x (1 – 0.30) = 21%

ii. Management's proportion of ownership of the company in case of leveraged recap.

Management Shares after Recap

Management receives five shares for every one share held. The management presently holds 200,000 shares out of 8 million outstanding shares. Hence, the managements share after recap will be 2,00,000 x 5 = 10,00,000 or 1 million shares.

Public shareholders will receive one share for every share held.

Hence, public stockholder shares after recap

80,00,000 – 2,00,000 = 78,00,000 or 7.8 million

Total shares after recap = 1 million + 7.8 million = 8.8 million.

Proportion of ownership by management = 1/8.8 = 11.36%.

Management obtains a lesser ownership position with the leveraged recap than with the LBO.

With the leveraged recap, the company remains a public corporation and management can trade its shares. With an LBO, it owns stock in a private company and such stock is illiquid. There are certain costs for the public corporation and, perhaps, an undue focus on quarterly earnings, which would not be the case with private company LBO. The leveraged recap can be completed without putting the company up for sale and obligating the board of directors to accept the highest offer. However, with the leveraged recap, 80 percent of the stock will stay in public hands so the company still could be subject to hostile takeover attempts. However, the high degree of leverage may serve as a deterrent.

84. **Amortization of Bank Loan**

(Amount in Rs.)

Year	Interest	Principal	Balance	Total payments
1	1,17,000	1,38,883	7,61,117	2,55,883
2	98,945	1,56,938	6,04,179	2,55,883
3	78,543	1,77,340	4,26,839	2,55,883
4	55,489	2,00,394	2,26,445	2,55,883
5	29,438	2,26,445	–	2,55,883

Loan of Rs.9,00,000 at 13% interest for 5 years.

Annual payment = 9,00,000/$PVIFA_{(13,5)}$ = Rs.2,55,883

Amortization of FI's Loan

(Amount in Rs.)

Year	Interest	Principal	Balance	Total payments
1	56,000	50,893	2,99,107	1,06,893
2	47,857	59,036	2,40,071	1,06,893
3	38,411	68,482	1,71,589	1,06,893
4	27,454	79,439	92,150	1,06,893
5	14,743	92,150	–	1,06,893

Loan of Rs.3,50,000 at 16% interest for 5 years.

Annual payment = 3,50,000/$PVIFA_{(16,5)}$ = Rs.1,06,893

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Pro forma Cash Flows

(Amount in Rs.)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
EBIT	4,50,000	4,50,000	4,50,000	4,50,000	4,50,000	4,50,000
– interest *		1,73,000	1,46,802	1,16,954	82,943	44,181
EBT		2,77,000	3,03,198	3,33,046	3,67,057	4,05,819
– taxes		1,10,800	1,21,279	1,33,218	1,46,823	1,62,328
NI		1,66,200	1,81,919	1,99,828	2,20,234	2,43,491
+ depreciation**		86,875	86,875	86,875	86,875	86,875
CFBDR		2,53,075	2,68,794	2,86,703	3,07,109	3,30,366
– principal repaid		1,89,776	2,15,974	2,45,822	2,79,833	3,18,595
Cash flow cushion		63,299	52,820	40,881	27,276	11,771

*Interest = Interest paid on bank loan + Interest paid on FI's loan

**Depreciation = (9,00,000 + 3,50,000 + 70,000 + 70,000)/16 = Rs.86,875

Statement of Equity and Debt

(Amount in Rs.)

Equity*	1,40,000	3,06,200	4,88,119	6,87,947	9,08,181	11,51,672
Debt	12,50,000	10,60,224	8,44,250	5,98,428	3,18,595	–
Total assets	13,90,000	13,66,424	13,32,369	12,86,375	12,26,776	11,51,672

* Equity = Existing equity + NI

85. a. The shares should be sold if Mr. Rao thinks that the takeover attempt will fail. But, according to the analyst's estimates if the attempt succeeds, each share will be worth Rs.100 (Value of Equity/Number of Shares = 10,00,000/10,000), so selling for Rs.75 is not advisable. If it fails, each share will only be worth the current market price of Rs.50.

b. The underlying reason for the contradiction above is that the bid price is lower than the post-takeover value per share. Normally, successful bid must be set above the expected value per share, so that the shareholders who sell profit more than shareholders who don't. That way, enough shareholders will tender their shares. In fact, all shareholders will want to tender their shares, but in order for the bidders to make money on the deal, they also should set a restriction on how many shares they will buy.

86. **Assumption:** The P/E of the stock remains the same in both the alternatives.

Alternative 1

a. Pay Rs.300 thousand in the form of dividend

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Alternative 2

Repurchase Rs.300 thousand worth of shares

Number of shares repurchased $= \frac{300}{15}$ = 20 thousands

Shares remaining = 100 – 20 = 80 thousand

$\therefore$ Changed EPS = 1.5 x $\frac{100}{80}$ = 1.875

$\therefore$ Revised price = $\frac{15}{1.5}$ x 1.875 = Rs.18.75

b. Alternative 2 is better as the price of the share increases to Rs.18.75 from Rs.15.

87. a. Let n shares be bought at price 'p' so that the shareholders wealth is not effected.

Current EPS = Net income/Number of shares

= 50/10 = Rs.5 per share

Current P/E = Market price per share/Earnings per share

= 25/5 = 5 times

New EPS = 50/(10 – n)

Current P/E = 5 = p/[50/(10– n)] $\frac{p(10-n)}{50} = 5$

or, 10p – np = 50 x 5

or, 10p – np =250 . . . . . (1)

Since the company has the option to either pay the dividend or use this amount to buy-back the shares, the value of the shares repurchased will be equal to the pay-out ratio.

50 x 0.4 = 20 = np (value of the shares repurchased)

Substituting this value in equation (1)

10p – 20 = 250

10p = 270

p = 27

b. Number of shares to be repurchased

np = 20

n = 20/p

= 20/27 = 0.74074

n = 74,074 shares

c. EPS after the buy-back

EPS = 50/(10 – 0.74074)

= Rs.5.4

Expected market price after repurchase = EPS x P/E

= 5.4 x 5 = Rs.27

88. a. Shareholder wealth effect = (Fraction of shares repurchased x Initial premium by tender offer) + (Fraction of shares not repurchased x Premium of the expiration price after the share repurchase)

0.24 = 0.23 x 0.31 + 0.77 x X

0.1687 = 0.77 X

X = 0.2191 or 21.91%

Hence, the premium of the expiration price after the share repurchase is 21.91 or 22 percent approximately.

b. Thus, of the 24 percent wealth effect, 7.13 percent goes to the tendering shareholders and 16.87 percent goes to the non-tendering shareholders.

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89. According to the basic stock repurchase model

$P_E N_E = P_O N_O - P_T (N_o - N_E) + W$

Where

P_O = Pre-announcement share price

P_T = Tender price

P_E = Post-expiration share price

N_O = Pre-announcement number of shares outstanding

N_E = Number of shares outstanding after repurchase

W = Shareholder wealth effect caused by the share repurchase

= 1,50 x 1,00,000 – 160(30,000) + 0.2 x 30,000

= 1,50,00,000 – 48,00,000 + 6,000

= Rs.1,02,06,000

Therefore, value of the shares outstanding after expiration of the repurchase offer Rs.1,02,06,000.

90. Repurchase Vs Investment Results

		Repurchase Rs.400	Invest Rs.400
1.	Cash flow	Rs.300	Rs.360
2.	Cost of capital	10%	10%
3.	Intrinsic value before repurchase [(1)/(2)]	Rs.3,000	Rs.3,600
4.	Intrinsic value per share [(3)/Number of shares]	Rs.30	Rs.36
5.	Investment	Rs.400	Rs.400
6.	New equity value [(3) – (5)]	Rs.2,600	Rs.3,200
7.	Share repurchase premium	0.00%	–
8.	Price per share under repurchase [MPS{1+ (7)}]	Rs.20	–
9.	No. of shares repurchase [(5)/(8)]	20	0
10.	New no. of shares [Initial no. of shares – (9)]	80	100
11.	Shareholder intrinsic value per share [(6)/(10)]	Rs.32.50	Rs.32

It is obvious from the foregoing that repurchasing of the shares improves the intrinsic value of the company than investing in the bond market.

91. a.

First tier –	50,001 x 65 =	Rs.3,250,065
Second tier –	49,999 x 50 =	Rs.2,499,950
Total purchase price		Rs.5,750,015
Total value of stock before	100,000 x 55	Rs.5,500,000
Increment to SR Ltd. stockholders		Rs.250,015

If AB Ltd. combined with SR Ltd., total economies of Rs.1.5 million could be realized. SR Ltd. receives only a modest amount of this i.e., it receives only Rs.2,50,015 in contrast AB Ltd. obtain a large share.

b. With a two-tier offer there is a great incentive for individual stockholders to tender early, thereby ensuring success for the acquiring firm.

SR stockholders would be better off holding out for a larger fraction of the total value of the economies. They can do this only if they act as a cartel in their response to the offer.

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92. First tier 50,001 x 65 = 3,250,065

Second tier 49,999 x 40 = 1,999,960

Total purchase price Rs.5,250,025

This value is lower than the previous total market value of Rs.5,500,000. Clearly, stockholders would fare poorly if in the rush to tender shares the offer were successful. However, other potential acquirers would have an incentive to offer more than AB Ltd., even with no economies to be realized. Competition among potential acquirers should ensure counter bids, so that AB Ltd. would be forced to bid less than Rs.5,500,000 in total, the present market value.

93. **ESOP Financing**

(Amount in Rs.)

Particulars	0	1	2	3	4
ESOP payroll	–	16,000	18,000	20,000	22,000
Max principal	–	4,000	4,500	5,000	5,500
Amount owed	–	16,000	11,500	6,500	1,000
Income Statement					
Operating income	–	14,000	15,400	16,940	18,634
ESOP contribution – Interest		2,000	1,200	750	250
ESOP contribution principal		4,000	4,500	5,000	5,500
Income before taxes		8,000	9,700	11,190	12,884
Income tax @ 40%		3,200	3,880	4,476	5,154
Net Income – Tax books		4,800	5,820	6,714	7,730
Net Income – Actual		8,800	10,320	11,714	13,230
Cumulative net income		8,800	19,120	30,834	44,064
Capitalization					
Long-term debt	20,000	16,000	11,500	6,500	1,000
Shareholder's equity	35,000	43,800	54,120	65,834	79,064
ESOP obligation	(20,000)	(16,000)	(11,500)	(6,500)	(1,000)
Net equity = Book value	15,000	27,800	42,620	59,334	78,064
Total capital	35,000	43,800	54,120	65,834	79,064
Shares outstanding	3,500	3,900	4,350	4,850	5,400
Shares additions	–	400	450	500	550
ESOP capital cumulative shares	–	400	850	1,350	1,900
ESOP% of shareholders equity owed	–	10.26%	19.54%	27.84%	35.19%
ESOP equity at book value (rounded off) [ESOP% of shareholder's equity owed x Shareholder's equity]	–	4,494	10,575	18,328	27,823

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Part III: Applied Theory (Questions)

1. Why do corporates go for restructuring exercise? Discuss the various forms of restructuring exercises that are being practiced by corporates across the globe.
2. Mergers are not a new phenomenon, the history of mergers dates back to 19th century. Narrate the history of merger movement.
3. What do you mean by 'stability strategy'? What are the indicators based on which a company can decide whether to go for stability strategy or not?
4. Why do companies divest their assets?
5. How do you define a 'merger'? Discuss the different types of mergers with suitable examples.
6. Discuss the rationale behind mergers and acquisitions.
7. What are the key drivers that increase the merger activities?
8. Briefly explain some of the good motives for a merger. Highlight the difficulties associated with a typical merger.
9. What are conglomerate mergers? Distinguish between various types of conglomerate mergers.
10. Along with the investment bankers, the financial institutions have also prospered with the catching up of mergers and acquisitions. What factors must a financial institution consider while financing mergers and acquisitions?
11. Operating synergy plays a major role in deciding the mergers. Discuss as to how this can be achieved?
12. Briefly discuss the various methods that are being used by professionals for valuing a business.
13. Discuss the 'cash flow' method of business valuation. How is the 'cash flow' method different from the 'balance sheet' approach?
14. "Valuation is a critical issue in M&As. Proper valuation will determine whether a M&A will produce the desired value or not". In this context, briefly describe the factors involved in the valuation of the deal from the point of view of a 'target'.
15. Synergy can be defined as '1+1 = 3'. Discuss. What do you mean by financial synergy?
16. Auction is considered to be one of the transparent methods of divestiture. Discuss.
17. "Strategic partnering occurs when two or more organizations establish a relationship that combines their resources, capabilities, and core competencies for some business purpose". In this backdrop, discuss the various types of strategic partnerships citing some recent examples.
18. How do you define a 'joint venture'? Why do they exist? Discuss some of the reasons for abortive lives of joint ventures.
19. Many international finance giants are teaming up with Indian counterparts to form joint ventures in insurance sector. Explain the reasons behind the formation of international joint ventures.
20. "The key aim of ESOPs is to increase organizational performance on a continuous basis. This is achieved by vesting a part of the ownership in the hands of employees, who in turn put efforts to increase efficiency and productivity." In this context, discuss the rationale of the setting of ESOPs by corporates across the globe and on what basis do corporates grant ESOPs to their employees.
21. Why do Companies use ESOPs? How are shares held under an ESOP valued?
22. "ESOPs can be used as a corporate finance tool". Discuss.
23. ESOPs provide advantages like aligning the interest of the managers with those of the owners. What factors must be considered while adopting ESOPs?
24. What is a reverse merger? How is it better than the IPO way of going public?

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25. "Growth and diversification can be achieved both internally and externally. For some activities, internal development may be beneficial. For others, a thorough analysis may disclose sound business reasons for external diversification." In this backdrop, briefly discuss what an 'internal development' is all about and the situations where a company can decide to go for internal development.

26. What is LBO? Discuss the various elements in an LBO operation.

27. Discuss the "information or signaling hypothesis" in the context of share repurchase.

28. Discuss the various defensive strategies that are being practiced by corporates to get themselves protected from hostile takeovers.

29. What do you understand by 'industry concentration'? How do you assess the concentration of an industry?

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Part III: Applied Theory (Answers)

1. Corporates go for restructuring exercises for the following reasons:

- To increase the competitive strength both domestically and globally.
- To improve the core competencies.
- For debt equity restructuring to reduce high interest obligations.
- To cope up with the funds constraints or utilization of excess funds.
- To reduce time and cost overruns.
- For downsizing and reducing the number of organizational layers for increasing the operational efficiency.
- For growth and entry into new markets.
- For corporate tax benefits.
- For automatic approval for FDI in companies.
- For new industrial licensing policy or government policy decisions.
- To enhance shareholders' value or to improve the share price of the company.
- For decreasing economies of scale.
- To come out of the unwanted diversification committed earlier.
- For transferring the facility dominated business into corporate entity.
- Underutilization of excess capacities or to achieve operational efficiency.

Various Forms of Restructuring

Business entities practice various forms of restructuring exercises to exploit opportunities. Following are some of the major restructuring strategies practiced by corporates all over the globe.

Expansion: A major objective of mergers, tender offers, and joint ventures is to achieve expansion and growth.

a. *Merger* – Any deal that forms one economic unit from two or more previous units.

b. *Joint venture* – A combination of assets/resources contributed by two/more business entities for certain business venture and a limited duration. Each of the venture partners continue to operate as a separate entity, and the joint venture represents a new business undertaking.

c. *Tender offer* – A technique of making a takeover through a direct offer to target the firm shareholders to purchase their shares.

Sell-offs: Sell-offs represent the general term for divestiture of part or all of a firm by any one of the number of methods (for example, sale, liquidation, spin-off, etc.).

a. *Spin-offs* – A transaction where a company distributes on a pro rata basis all of the shares it owns in a subsidiary to its own shareholders. This deal creates a new public company with the same proportional equity ownership (as in the beginning) as the parent company.

b. *Divestitures* – A transaction involving the sale of a segment of a company/assets/a product line/a subsidiary to a third party for the consideration of cash/securities.

c. *Equity carve outs* – A transaction where a parent firm offers some of the subsidiary's common stock to the general public, to bring in a cash infusion to the parent firm without loss of control.

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Changes in Ownership Structure

a. *Exchange offer* – A business transaction that provides one class (or more) of securities with the right/option to exchange a part or all of their holdings for a different class of the firm's securities, for example, an exchange of common stock for debt. Exchange offer enables a change in the capital structure with no change in investment.

b. *Going private* – The repurchasing of some or all of a company's outstanding stocks by employees or private investors. In other words, it is the transformation of a public corporation into a privately-held firm (often through a leveraged buyout or a management buyout).

c. *Share repurchases* – A public corporation purchases its own shares via tender offer, from the open market, or in negotiated buy-backs.

d. *Leveraged buyout* – The purchase of a company by a small group of investors, financed largely by debt. This transaction usually entails going private.

e. *Leveraged cash out* – A defensive reorganization of the company's capital structure where the outside shareholders receive a large one-time cash dividend, and the inside shareholders receive new shares of stock instead.

f. *Employee Stock Ownership Plans (ESOPs)* – A contribution pension plan designed to invest mainly in the stock of the employer firm.

Restructuring: It involves product-market participation, asset redeployment, financial engineering, changes in management systems to boost revenue growth and to achieve efficiency including cost reductions.

2. All merger movements in the past occurred when the economy experienced sustained high growth rates and coincided with particular developments in the business environments. Mergers represent resource allocation and reallocation processes in the economy, with firms responding to new investment and profit opportunities arising due to changes in economic conditions and technological innovations affecting industries. Mergers, rather than internal growth, may sometimes expedite the adjustment process and occasionally, are more efficient than the latter in terms of resource utilization.

Firms are not motivated to make large investment outlays in times of unfavorable business prospects, which may be a reason for merger activity being concentrated in periods of high business activity. Merger action is warranted only when the future benefits accruing to a business endeavor exceed its costs. When such favorable business prospects join with changes in competitive conditions directly motivating a new business strategy, M&A activities are stimulated.

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The 1895-1904 Merger Movement

The turn of the century was a period of rapid economic expansion. The combination movement during the period consisted mainly of horizontal mergers, involving two firms operating in the same kind of business activity, and resulted in high concentration in many industries, including heavy manufacturing industries. The merger activity peaked in 1899, began its downturn in 1901, as some combinations failed, to realize their expectations and almost ended in 1903, when a severe economic recession set in.

This merger movement accompanied major changes in economic infrastructure and production technologies such as completion of the transcontinental railroad system, the advent of electricity, and the increased use of coal. The completed rail system resulted in the development of a national economic activity and thus merger activity represented to a certain extent the transformation of regional firms into national firms.

The three motivational factors ascribed to this first major merger movement are:

i. To obtain economies of scale,

ii. Merging for monopoly, and

iii. Promotional motive with respect to failing firms.

Several studies have been attempted to measure the success of early mergers in terms of their profitability, and to determine the reasons for their success or failure. According to Livermore (1935), success is due to "astute business leadership" and, in particular, to rapid technological and managerial improvement, development of new products or entry into a new subdivision of the industry, promotion of quality brand names, and commercial exploitation of research. Dewing (1953) attributes failure to lack of efforts for realizing the economies of scale by modernizing the inherited plant and equipment, increase in overhead costs and lack of flexibility due to large size, and inadequate supply of talent to manage a large group of plants.

The 1922-1929 Merger Movement

The second wave of mergers also began with an upturn in business activity in 1922, and ended with the onset of a severe economic slowdown in 1929. Mergers in 1920s, were represented by both forward and backward vertical integration. Many of the mergers in this period occurred outside the previously consolidated heavy manufacturing industries, predominantly in public utility and banking industries. About 60 percent of them occurred in the still fragmented food processing, chemicals, and mining sectors. The question of monopoly was, therefore, not applicable in most cases and the transformation of a near monopoly to an oligopoly by "merging for oligopoly" was more frequent. While oligopoly provided a motive for several mergers, it was limited to only a small fraction of the mergers.

A large portion of mergers in the 1920s were product extension mergers as in the cases of IBM, General Foods, and Allied Chemical, market extension mergers in food retailing, department stores, motion picture theatres, and vertical mergers in the mining and metals industries.

Major developments in transportation, communication, and merchandizing served as the motivational factors of these mergers.

Increase in vertical integration occurred due to an appreciation, by business in the 1920s, of the advantages of integration (Stocking). The advantages were related to technological economies such as shortening of processes or elimination of waste motions in a mechanical context, or to reliability of input supply and secured product outlets in situations where various market imperfections exist.

The 1940-1947 Merger Movement

The Second World War and the early post-war years were accompanied by rapid economic growth and an upsurge in merger activity. However, the merger movement was much smaller than earlier ones due to lack of significant changes in technological and business environments. No pervasive motives other than "conventional" ones have been attributed to this merger movement. The primary motives of mergers in this period were:

- Government regulation and Tax policies.
- A large number of vertical mergers took place to circumvent price controls and allocations during wartime and post-war periods [Stigler (1951)].
- Many owners were motivated to sell their firms because of high wartime and post-war income and estate taxes and the lower capital gains tax [Butters, Lintner, and Cary (1951)].
- General business considerations as greater managerial organization and investment requirements for their firms motivated many sellers.
- Buyers were motivated by the desire for a new product or production organization, or for greater vertical integration.

The Conglomerate Merger Movement of the 1960s

Following the amendment of the Clayton Act of 1914 by the Celler-Kefauver Act of 1950, the importance of horizontal and vertical mergers declined in relation to conglomerate mergers. When merger activity peaked by 1967-1968, horizontal and vertical mergers accounted for only 17 percent of the total number of mergers. Among the conglomerate mergers, market extension mergers became negligible in number when compared to an increase in product extension mergers to 60 percent. Pure conglomerate mergers increased steadily to about 23 percent of all mergers.

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The high level of the merger activity was reached during the 3-year period of 1967-1969, which was also a period of booming economy. The number of mergers sharply declined with a slowdown in general economic activity after 1969.

A strong motivation among the conglomerate firms was defensive diversification in order to avoid (a) sales and profit instability, (b) adverse growth developments, (c) adverse competitive shifts, (d) technological obsolescence, and (e) increased uncertainties associated with their industries [Weston and Mansinghka (1971)]. In addition, firms were also motivated by tax considerations and some of the conglomerates pursued positive programs such as applying advanced technology in industries and firms where technology had lagged. Some others attempted to utilize effectively special capabilities in financial planning and control (for instance, ITT and Transamerica).

3. Stability strategy is one in which the organization intends to consolidate the gains thus far made and maintain its present size and present level of operations. It does not want to open new factories, add market share, or march into new geographical territories. An organization's strategists might choose stability when:

- The industry or the economies are in turmoil or in an uncertain state. An alarming recession or uncertain recovery period might convince strategists to be conservative until conditions turn more certain.
- The industry has slow or zero growth prospects.
- The organization just completed a phase of quick growth and needs to consolidate the resulting changes before pursuing more growth.
- The firm is large and its industry is mature.

4. The factors responsible for companies divesting assets are divided into five categories: (i) economic, (ii) psychological, (iii) operational, (iv) strategic, and (v) governmental or legislative. Many of the subjects under these categories overlap.

Economic

- **Never be a Factor at any Investment Level**

  Many times, the market in which the company is dealing is too narrow. It becomes impossible for the management to realize an adequate return regardless of the dollars and corporate muscle put into the particular division. This kind of situation arises where the company is faced with impossible goals of achieving market share in the face of competition that is either too well entrenched, tough, or numerous to make any investment worthwhile.

- **Continual Failure to Meet Goals**

  The continual failure by a division to meet quarterly or yearly projections serves as an excellent rationale for divesting. Continual losses or continual shortfall arising due to overestimating the potential of the company can prove expensive to any company.

- **Tax Considerations**

  Tax considerations may serve as a justification for divestment. A company can often take advantage of changes in the tax laws by selling a division or a product line at an opportune time, and derive benefits from losses incurred or other benefits allowed by the existing tax laws. Since tax laws are continually changing, divestment can be considered as an opportunity that can quickly be lost by a change in law. For example, when Net Operating Losses (NOLS) could be easily sold and utilized by the acquirer, many companies taking advantage of this temporary tax benefit sold off their loss-plagued divisions.

- **Shrinking Margins**

  Often the primary reason for a divestiture is reduced profit margin. Examples of companies that have run large divestiture programs because of shrinking margins are G D Searle and American Can. Even though the divestment programs for both these companies were part of their strategic plans, the short-term reason for initiating the divestment was the continual reduction in profit margins of the divisions that were sold.

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- **Better Alternate Use of Capital**

  This factor serves as a combined economic and strategic reason for considering divestment. A large number of companies in corporate America have begun divestment programs in order to make a better use of their capital. Companies that have reinvested proceeds into other areas of existing businesses or into new acquisitions through divestment programs have been extremely satisfied.

- **Profits**

  Lack of profits is the most noted and visible reason for corporations to initiate divestment programs. Marginally, profitable divisions or those divisions whose financial performance is not in line with the financial performance of other divisions in the company are sure targets for divestment. Unless serving some strategic purpose, such as a research and development unit, divisions that continue to be unprofitable and incur losses year after year should certainly be divested. A corporation's existence is dependent on its stockholders satisfaction and the best way to satisfy the stockholders is to perform well and produce generous profits. The prime candidates for divestiture should be the divisions and product lines that erode profit and which cannot be restructured and reshaped so as to give a substantial and acceptable return on investment in alliance with the corporation's goals.

Psychological

- **Eliminate Psychological Effect of a Loser**

  No one likes to be associated with a loser. It is psychologically very depressing to be working for or to be associated with a loss-making company, which has very little future ahead of it. Every management should try to avoid having a losing company over a long-term since the effects of a loser can be as contagious as the effects of a winner. It is best to sell-off a losing company if it cannot be fixed.

Operational

- **Lack of Intercompany Synergy**

  Product lines or divisions acquired or set-up to add synergy to the company's other divisions, but failed to do so, are prime targets for sell-offs. If the management is unable to consolidate operations to increase profitability, then liquidation or divestment is an alternative.

- **Labor Consideration**

  Often companies are divested because of unusual labor situations, which might consist of labor unrest in a particular plant, lack of adequately skilled labor pool, or outside economic and political factors causing shortage of labor at competitive prices. Divestiture can be considered as an alternative, if moving or consolidating the operation cannot remedy the situation.

- **Competitive Reasons**

  Competition forms the basis of a capitalistic system. However, when competition is intense, and is of so large and effective nature, that it becomes impossible to compete with, withdrawing from a market can be accomplished by divesting an ongoing division. International Harvester, for example, due to its involvement in several markets where the competition was too intense, larger and more able to compete in terms of productivity, research and development, and new facilities, preferred to sell-off one of its fundamental old businesses to a larger, more financially capable company instead of remaining in these market segments as an ineffective also ran.

- **Management Deficiencies**

  A company's inability to put together the right management team to run a division reflects the management's lack of ability to recruit, hire, and even provide internally proper management to run its companies, and if the situation exists and cannot be corrected, divestitures should be considered.

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- **Concentration of Management Efforts**

  It is necessary to focus the management's efforts where they will be most productive for the company. When one or several divisions of a company are losing money and the management has to concentrate its efforts on trying to turn around the losers, it is better that the problem divisions are divested quickly so that the management has ample time to return to its normal and important functions of promoting the solid and strategically important units of the company.

- **Eliminate Inefficiencies**

  Many companies operate marginal divisions indefinitely till these units encounter significant losses. However, marginally profitable units tend to get caught in the trap wherein the management starves them for growth capital. In course of time, these units become more inefficient and less competitive and ultimately begin to lose important money. It is essential to spot these trends early and try to sell these units before they become big losers and begin gathering significant downward momentum. If divestiture can be accomplished within a reasonable time frame, not only are future losses eliminated, but the sale of the unit helps inject more capital into the corporate treasury than would have been obtained if the sell-off was delayed too long. These situations occur commonly in vertically integrated firms, where various operations can no longer be conducted efficiently. An excellent example of this kind of situation is that of Ford Motor Corporation's divestiture of its basic steel operations.

Strategic

- **Change in Corporate Goals**

  This is the most common reason for companies to begin divestment programs. A company's motivation to divest itself of bad divisions, or any division, is often masked by the statement that the corporation is changing its strategic goals and wishes to divest one or several of its divisions. For example, several years ago Gould Inc. in its efforts to get out of the electrical equipment and equipment-support business and upgrade technologically into the electronics business, divested all of its technologically mundane divisions over several years and used the funds obtained to acquire companies in the electronics business, thereby moving several steps up the technological ladder. In initiating a divestment program as a result of a change in corporate strategy, the key to the divestments is not only getting out of unwanted businesses, but estimating and projecting the capital that would be raised by selling off these divisions and how much this capital would assist in either acquiring or starting up new ventures that are more in line with the newly stated corporate strategic goals.

- **Change in Corporate Image**

  Some companies feel that in order to effect a "new" image, in addition to the change in corporate goals, certain divisions must be divested. The divestments, rather than pertaining to segments that are failing, or even segments that have limited long-term potential, might involve businesses in areas that are not to the liking of the management. For example, Gulf & Western which was involved in a total restructuring, utilized divestiture of several of its large divisions to move out of mundane manufacturing areas and became more visible in the fast-moving, aggressive financial and entertainment business.

- **Technological Reasons**

  Many companies undertake divestment programs to technologically upgrade operations. For example, Litton Industries undertakes a continual year-to-year upgrading of its companies, regardless of profitability, to maximize the potential of growth in higher technological areas. On the other hand, companies downgrade technologically when they are unable to adapt to the fast-moving nature of technologically oriented business. Many companies have used divestment strategies

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to withdraw from the high tech areas and retreat to their core business. Warner Communications, with the sale of its Atari division, provides an excellent example of this kind of divestment strategy.

- **Poor Business Fit**

  Often divisions make no sense at all strategically and fail to fit with other divisions of the company. As a result, many a times the new management of the acquiring companies that inherit these businesses, take the course of divesting quickly. For example, Western Union Telegraph Co.'s newly appointed chairman quickly divested off E F Johnson Company, due to its failure to fit in Western Union's core business.

- **Market Saturation**

  A division or a product line in which the investment required to maintain the market share exceeds the cash it generates is a perfect candidate for divestiture. This situation is simply a case of a cash cow turning into a dog.

- **Takeover Defense**

  Divestment serves as a classic takeover defense mechanism and has been used successfully to thwart many of the takeover bids. A typical maneuver of this kind involves the sale of a "Crown Jewel" to deter an aggressive takeover player from going ahead with its plans. For example, this tactic was successfully used by Brunswick Corporation in its sale of its medical division, the best operating division of the company, to American Home Products in order to thwart an unsolicited takeover attempt by Whitaker Corporation. Shortly after this event, Whitaker Corporation withdrew its takeover bid for the company.

Governmental

- **Government-Directed Divestitures**

  Government-directed divestitures often occur as a result of major mergers or acquisitions where the merger of two like companies gives rise to antitrust problems. In order to avoid antitrust litigation by the government, companies either voluntarily divest certain divisions or are directed to do so. The rush of oil combinations taking place over the last few years have resulted in major oil companies selling off large parts of their merged companies. For example, the Gulf/Standard Oil of California and Taxaco/Getty transactions involve government-directed divestitures.

  Companies are hence forced to evaluate operations that go against government-enacted environmental laws and practices. And in many cases, either decide to sell a plant, switch to an alternate method of operation, or shut down the offending operation in order to meet government regulations.

  While a fairly comprehensive listing of the factors to be considered while making divestment plans has been given above, there are other factors as well that can have a direct bearing on the divestment strategy. These factors may include outside pressure from stockholders, the economic conditions at any given time, and political considerations. These additional macro considerations in addition to any combination of the factors described above should be reviewed before the divestment decision is made.

5. A merger is a combination of two or more entities from which one corporation continues to exist. An example of a merger is DaimlerChrysler – a merger between Daimler-Benz and Chrysler.

There are three/four types of mergers, though the time-scale to finish the deal, and the regulatory rules in each sector, may differ.

- **Horizontal Merger:** This merger takes place when a company links up with another one that is in the same production line – for example, a two-wheeler manufacturer merging with another two-wheeler manufacturer.

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- **Vertical Merger:** A vertical merger takes place when a company links up with another one that is at a different stage in the production cycle. An input supplier who owns a firm has an incentive to engage in raising rival's costs.

  Example: Barnes & Noble's attempted takeover of Ingram, the largest supplier (who supplied 80% of all Amazon books).

- **Conglomerate Merger:** Conglomerate merger takes place when two companies with no apparent links merge. Example: Phillip-Morris and Miller Beer.
- **Cross-Boarder Merger:** A cross-boarder merger involves companies from different countries.

6. The major rationale behind Mergers and Acquisitions (M&As) are as follows:

- **Economies of Scale:** Reduction in the average cost of production and hence in the unit cost when output is increased is known as Economies of Scale. For instance, sharing central services such as accounting and finance, the office, executive and higher management, legal, sales promotion and advertisement, etc., can substantially reduce overhead costs.
- **Synergy:** It results from complimentary activities, example, one firm may have substantial financial resources while the other has profitable investment opportunities. Likewise, one firm may be strong in RD, whereas the other firm may have a very efficient production department. Similarly, one company may have well-established brands but lack marketing organization, and another firm may have a very strong marketing organization. The merged concern in all these cases will be more efficient than the individual firms. Also, a post-merger firm is likely to raise finances at lower rates than that at which either of the pre-merger constituents could have acquired them, as it is perceived to be more secure.
- **Fast Growth:** Mergers often enable the new firm to grow at a faster rate than via the internal expansion route through its own capital budgeting proposals. The reason is that the acquiring company enters a new market quickly, and avoids the delay associated with building a new plant and establishing new products.
- **Tax Benefits:** If a healthy company acquires a sick one, it can avail of the income tax benefits under Section 72-A of the Income Tax Act. This stipulates that subject to the merger fulfilling certain conditions, the healthy company's profit can be set off against the accumulated losses of the sick unit. The money saved thus must be used for the revival of the sick unit. For instance, the existing creditors of the sick unit may be paid-off. The healthy company, besides saving on tax, acquires additional manufacturing capacities and strengths.
- **Diversification:** A merger between two unrelated firms would tend to reduce business risk, which in turn reduces the discount rate/required rate of the firm's earnings, thus increasing its market value. In other words, such mergers help stabilize the overall corporate incomes which would otherwise fluctuate.
- **Acquisition of Brand Names, Patent Rights, etc.:** A takeover or merger may be a relatively easy way of acquiring established brand names, valuable patent rights, technical know-how, etc.
- **Deployment of Surplus Funds:** A profit-making company may have surplus funds that it is not in a position to invest profitably. In the present context, many of the companies having a good track record are approaching the capital market for raising resources. Issuing shares and debentures at a substantial premium, enabling the reduction of average capital cost, is raising funds. At the same time, there are companies that are starved of funds due to expansion programs, developmental work or some other reasons.
- **Reduction in Floatation Cost:** When two firms merge, they can save on the flotation cost of future equity, preference and debenture issues. In general, these costs (in % terms) decrease with an increase in the size of the issue.

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- **Quick Entry:** To gain access to new markets, many MNCs prefer merging with a local established company, which knows the behavior of the market and has established consumers. An excellent example of this is the Indian market.
- **Avoiding Cut-throat Competition:** A merger/takeover route may enable companies to avoid competition in a situation where there are too many players targeting a limited market. Example, VIP took over Universal Luggage and put an end to the massive price discounting, which was eating up their profits.

  The Mergers and Acquisitions (M&A) scenario is hotting up. Major corporations worldwide are embarking on growth plans to achieve higher turnover and profits. Mergers, acquisitions and takeovers all form an important part of this strategy. While mega deals are being struck abroad, India is also getting a taste of such deals. With the end of Government protectionism and entry of multinational companies, many companies are compelled to change their old ways. Many Indian companies are looking for partners to compete in the fast changing world. Though the M&A activity in India is just a fraction of that happening worldwide, it is having major repercussions on the domestic market.

  Mergers and acquisitions will become the order of the day. In the years to come, we will witness some very surprising M&As which would change the entire structure of the industry and benefit the merged entity. In India, mergers in the public sector can create some of the biggest companies of the world. Among the many advantages of M&A, the market capitalization of the merged entity will thwart the possibility of any hostile takeover attempt.

  In the years to come we will witness some very surprising M&As which would change the entire structure of that industry and benefit the merged entity. In India, mergers in the public sector can create some of the biggest companies of the world. Among the many advantages of M&A, the market capitalization of the merged entity will thwart the possibility of any hostile takeover attempt. Mergers and acquisitions indeed are the order of the day.

  Viewing from the Indian scenario, mergers will be an important aspect of strategy in the new age business. Many Indian companies – especially those run by business families – are watching the global M&A process eagerly. With the globalization of business, its time for Indian companies to look at the M&A process seriously to cut costs and corner new markets. Thus, mergers and acquisitions are picking up momentum and are surely here to stay.

7. The key drivers that increased the M&A activity are:

- **More Readily Accepted Strategy and the Need for Speedy Growth:** Buyers and sellers now accept M&As as a strategic growth vehicle. Most companies who do strategic planning have, as a significant component, an M&A plan. For buyers, the strategic initiatives to quickly grow in uncovered geographies or to add a base of clients in an "in-demand" market that is not easily (or rapidly) accessible are common influences of their M&A strategic plan. For sellers, the need for retirement liquidity or the need for financial and human resources to capitalize on immediate market opportunities that may be short-lived are major reasons for the actions driving their M&A plans.
- **Newly Found Capital:** The continued economic prosperity of the A/E/E industry has resulted, in some cases, in not only recapturing the lost value from the recession of the late 1980s and early 1990s but also created a newfound source of capital to fuel an acquisition effort – internally generated earnings.
- **Inefficient Market Pricing:** The efficient market theory holds that due to the effective dissemination of information and the sophistication of the buyer and seller, transactions occur at a fair market value. In other words, neither party would transact at a value that would cause one party to experience a windfall or take on unknown risk.

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However, M&A pricing in the A/E/E industry is not efficient. The major reasons are:

The overwhelmingly private, closely held nature of firms does not allow for efficient dissemination of M&A pricing information. Further, the erratic performance of the handful of publicly traded companies that have merged doesn't provide a reliable benchmark.

Despite a historically high level of M&A activity, the general level of sophistication and experience of the players in the M&A game is low compared to other industries.

Therefore, many buyers feel there are a number of undervalued acquisition opportunities in the market. Sellers feel there are a plethora of "strategic buyers" who will pay them more than what their firms are worth for so-called "strategic reasons."

- **Unsuccessful, Infeasible or Unavailable Internal Transfer Alternative:** Everything else being equal, most A/E/E firm owners would opt to sell the firm to the most logical buyers, their employees. However, this internal ownership transfer alternative may prove ineffective due to the need for the existing owner(s) to be liquid immediately, the absence of capital from internal ownership candidates to buyout the existing owner(s), the lack of a management succession plan to groom others to run the firm, and the unpredictability of the firm's future earnings to fund the buyout given the cyclical nature of the industry and the new ownership and management.

  Therefore, an unsuccessful internal deal may by default lead the existing owner(s) to an outside buyer, as there is a great reluctance with many owners to liquidate their A/E/E firms.

- **Continued Reconfiguration of the Industry:** While many subscribe to the consolidation of the industry along two tiers, the reality is that, on average, for every merger or acquisition in which one firm is absorbed, there is at least one replacement firm spun off as a result of management departures from the combined company (not to mention newly started firms driven by the current economic prosperity). Recent data on the number of industry firms bears this out.

  In terms of revenue, the industry is reconfiguring into a two-tiered market. The composition of the revenue generated in the industry continues to migrate towards market-focused firms that are either the large international, national, super-regional companies or the smaller niche-oriented operations. Those firms in the middle that are oriented solely by services (example, a structural or a mechanical engineer) and that have no market focus will find themselves searching for ways to gain the scale and mass needed to compete for the larger projects or to assemble the appropriate resources to be a specialist.

  Some middle tier firms will decide to "sell up" to the larger firms or merge with a similar size firm. Some will do nothing, become less valuable and not be attractive enough to employees for an internal deal. They will then be forced to find an outside buyer at a reduced value. And a few will try to become niche-players despite the fact that requisite downsizing goes against the American ideal of growth, and that there are not enough niches for all of these firms to thrive in.

- **Herd Mentality:** Finally, the sheer fear of being left behind while competitors all around acquire, merge or sell pushes otherwise unlikely firms into the M&A mix. The fact that there have been some notable M&A successes gives these firms optimism that they too can benefit from this movement. No one wants to be left behind or "outgrown" by the competition.

  So, expect the M&A activity for A/E/E firms to continue at a rapid pace through at least the rest of the 1990s. Four things that could slow the pace are:

  The continued inflated valuation expectations of many selling firms, which will discourage legitimate buyers.

  The negativism derived from high profile failures due to having no (or a poorly designed and implemented) strategy to effectively integrate the combining firms.

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The continuing stance of a significant number of industry firms that will not consider M&A a viable exit, growth or perpetuation strategy. A major economic slowdown.

Note: A/E/E Industry – Architectural Engineering & Environmental Industry.

8. There are several good motives for merger. They are:

- Economies of scale
- Economies of vertical integration
- Complimentary resources
- Unused tax-shield
- Surplus funds
- Eliminating inefficiencies.

Of these, economies of scale and complementary resources are the two most widely known motives for merger.

The difficulties associated with a merger are numerous but often easily overlooked. They include integration of product line, processes, Training, Research and Development (R&D), etc. The biggest obstacle is merging of two corporate cultures. Most of the mergers fail because of the difference in corporate culture.

9. Conglomerate mergers involve the mergers of two businesses in different and unrelated activities. Conglomerate mergers can be distinguished as product extension mergers, geographic market extension mergers and pure conglomerate mergers. Product extension mergers broaden the product lines of the firms and involve the merger between firms with related activities. These may also be called as concentric mergers. A geographic market extension merger involves the merger of two firms with activities being carried out in non-overlapping geographic areas. The pure mergers refer to the merger between businesses with unrelated activities and do not qualify for either product-extension or market-extension merger.

Conglomerate mergers can also be classified broadly into two financial conglomerates, and managerial conglomerates. Financial conglomerates provide flow of funds to each segment of their operations; they exercise control and are the ultimate risk takers. They take part in strategic planning but do not participate in operating decisions.

Managerial conglomerates carry the attributes of the financial conglomerates still further. By providing the managerial counsel and interacting with the existing management on the decisions, the conglomerates increase the potential for improving performance.

10. A financial institution should consider several factors while financing mergers and acquisitions. Three primary areas are management, operations and financial analysis.

Management: The lender should look at the existing management strength of the company. It should consider if the acquisition makes the existing management too small for the business; if the management has any expertise in the business to be acquired; if the prior acquisitions have been successfully managed and if the acquired management would continue with the company. Apart from all these, it should also consider the cultural mix of the two corporates.

These fundamental management issues need to be addressed before arriving at the other factors.

Operations: The lender of the funds should consider the operating benefits enjoyed by the acquiring firm as a result of the acquisition. It should also see that the management provides a thorough overview of key operating assumptions and define the factors that would increase productivity.

Once the lender gets a satisfactory review of the management and the operations, it should carry out a comprehensive financial analysis.

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Financial Analysis: The lender should focus on three financial items – leverage, liquidity and cash flow.

Leverage: The lender should consider the impact of the proposed transaction on the company's leverage. It should also see if there is sufficient equity to cushion a down-turn in the business. A company burdened with too much of debt at the onset of the merger itself would often have insufficient operating cushion to achieve its objectives. The lender should further find out if the company has any provisions for raising additional capital from other sources.

Liquidity: The lender should ensure that the company is having sufficient working capital to support the transaction even if the initial projections are not met. It should also consider the asset coverage or collateral support.

Projected Cash Flow: The lender should review the historical cash flow of the existing company and the cash flow of the proposed company. Increased working capital requirements should also be considered.

11. As per the operating synergy theory of mergers, the economies of scale exist in industry but before a merger, the levels of activity that the firms operate at are insufficient to exploit the economies of scale.

The operating economies of scale can be achieved through horizontal, vertical and conglomerate mergers. Operating economies occur due to indivisibilities of resources like people, equipment and overheads. The productivity of such resources increases when they are spread over a large number of units of output. For instance, expensive equipment in manufacturing firms should be utilized at optimum levels so that cost per unit of output decreases.

Operating economies in specific management functions such as production, R&D, marketing or finance may be achieved through a merger between firms, which have competencies in different areas. For instance, when a firm, whose core competence is in R&D, merges with another having a strong marketing strategy, the 2 businesses would complement each other.

Operating economies are also possible in generic management functions such as, planning and control. According to the theory, even medium-sized firms need a minimum number of corporate staff. The capabilities of corporate staff responsible for planning and control may, many a times, remain underutilized. When such a firm acquires another firm, which has just reached the size at which it needs to increase its corporate staff, the acquirer's corporate staff would be fully utilized, thus achieving economies of scale.

Vertical integration, i.e., combining of firms at different stages of the industry value chain also helps achieve operating economies by reducing the costs of communication and bargaining.

12. Following are the methods used by professionals across the world for valuing a business.

Asset Valuation Method: This method is frequently used for manufacturing and retail businesses as they have a lot of physical assets in inventory. Generally, it is based on inventory and improvements that have been made to the physical space used by the business. Discretionary cash from the adjusted income statement can also be included in the valuation.

Capitalization of Income Valuation Method: This method is often used by service organizations as it places the greatest value on intangibles (services) while putting no credit for physical assets. Capitalization is defined as the Return on Investment (ROI) that is expected. Putting simply, one ranks a list of variables with a score from 0 to 5 based on how strong the business is in each of those variables. The scores are averaged to arrive at capitalization rate that is used as multiplication factor of the discretionary income to find out the business value.

Adjusted Book Value Method: It is one of the least controversial valuation methods and is based on the assets and liabilities of the business.

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Capitalized Earning Approach: This method is based on the rate of return in earnings that the investor expects. For risk-free investments, an investor would expect less return (7-8 percent). Small businesses usually are expected to have a rate of return of 20-25 percent. Consequently, if our business has expected earnings of Rs.50,000, its value might be estimated at Rs.2,00,000 i.e., {200,000*0.25 = 50,000}.

Cash Flow Method: Cash flow method is based on how much of a loan one could get based on the cash flow of the business. The cash flow is adjusted for depreciation, amortization and equipment replacement, and then the loan amount is estimated with traditional loan business calculations. The amount of the loan is the value of the business.

Cost to Create Approach: This approach of business valuation is used when the buyer desires to purchase an existing functional business to save start-up cost and time. The buyer estimates what it would have cost to do the start-up less what is not there in this business plus a premium for the saved time.

Debt Assumption Method : This method normally gives the highest value. It is based on how much debt a business could have and still operate, using cash flow to pay the debt.

Value of Specific Intangible Assets Approach: This method is more helpful when there are specific intangible assets that come with a business that are highly valuable to the purchaser. To cite an example, a customer base will be valuable to an insurance or advertising agency. The value of the business is based on how much it would have cost the purchaser to generate this intangible asset itself.

Discounted Cash Flow Method: Discounted cash flow method is based on the assumption that a rupee received today is worth more than one received in the future. It discounts the business's projected earnings to adjust for risk, real growth and inflation.

Multiple of Earnings Method: This is one of the most familiar methods used to value a business. Under this method, a multiple of the cash flow of the business is used to estimate its value.

Excess Earning Method: This method is identical to that of Capitalized Earning Approach, but return on assets is made separate from other earnings that are interpreted as the 'excess earnings'. Return on assets usually is estimated from an industry average.

Multiplier or Market Valuation Method: This method uses an industry average sales figure from recent business sales in comparable businesses as a multiplier. For example, the industry multiplier for an advertising agency might be 0.75, which is multiplied by annual gross sales to find out the value of the business.

Owner Benefit Valuation Method: The value of the business is calculated by multiplying 2.2727 times the owner benefit. This method of valuation is mostly followed in the US markets.

Rule of Thumb Methods: These methods are quick and directly based on industry averages that help in providing a starting point for the valuation. Though not popular with financial analysts, this is an easy way to get an approximate on what our business might be worth.

Tangible Assets Method: Tangible asset method is often used for businesses that are losing money. The value of the business is based basically on what the current assets of the business are worth.

13. In cash flow method, buyers appraise the business by determining how much of a loan the cash flow will support. They look at the profits and add back to profits any expense for depreciation and amortization but also subtract from cash flow an estimated annual amount for equipment replacement. They also adjust owner's salary to a fair salary or at least an acceptable salary for the new owner.

The adjusted cash flow figure is used as a standard to measure the firm's capacity to serve the debt. If the adjusted cash flow is, for example, Rs.1,00,000, and prevailing interest rates are 10%, and the buyer desires to amortize the loan over a period of 5 years, the maximum amount a buyer is ready to pay for the firm would be around Rs.253,000. This is the loan payment that Rs.100,000 would support over 5 years.

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In this method, the value of a company changes with interest rate structures. In addition to interest rates, it also changes with the terms a buyer can get on a business loan. From a buyer's perspective the cash flow method is quite logical and makes a sense, but from a seller's perspective it sets a kind of arbitrariness in the process.

Under balance sheet approach of valuation, a business is worth no more than the value of its tangible assets. This would be the case for some businesses (not all) that are losing money or paying the owners less in total than a fair market compensation. Selling such a business is often a matter of getting the best likely price for the plant and machinery, inventories and other assets.

It is always advisable to approach other companies in the identical business line that would have direct use for such assets. This would mean that the seller's leasehold improvements would have value and the plant and machinery would have value as 'in place' plant and machinery. In place value is higher than the value on a piece-by-piece basis such as sale by auction.

14. Factors involved in valuation (from the point of view of a 'target')

- **Good Price**

  Preference for good premium than for the future earnings is one of the perspectives of the target firm. Example: Godrej's offer of Rs.100 crore to Transelektra, was far more attractive than that of Unilever.

- **Better Business Relationship**

  In an interesting case, SRF Ltd. sold its SRF Finance to GE Caps at a lower price compared to that of the competitors. SRF explained that the association with one of the world's largest financial services company would give it access to better business systems that no other company in India had.

- **Better Management and Employee Care**

  Mr. J R D Tata had imposed a condition on S M Datta of HLL that after the merger, not a single employee of TOMCO would be retrenched by HLL. This shows a different perspective of the target firm, where the responsibility of the target company's management towards the employees is exhibited.

15. The idea of synergy is simply that the company X's value and company Y's value equals Z, which is greater than the individual values of X and Y. That is 1+1=3. Two companies combined are worth more together than two separately. The term synergy is frequently used when describing fragmented and inefficient industries, such as petroleum marketing, automobile dealerships, etc. Fragmented industries, those with several publicly held companies and thousands of smaller, privately held companies, are believed by some to function quite less efficiently than concentrated industries. Examples of such industries include utilities, food processing, home appliances, etc. These units can be combined/backward linked/forward linked to create synergy.

Financial Synergy: Financial synergy aims at improving the ROI of a company by withdrawing investments from unproductive segments and reallocating towards productive segments. Example: Tisco selling off its cement production facilities and using the so generated cash flows for modernization of steel plant.

16. Auction is an alternative method of selling a company. As a tool of divestiture, it has evolved over the past few years and is used very effectively with high visibility companies. Merger and acquisition auction is usually applicable to the divestitures of divisions of both large and small public companies. Just as any other methodology used in the sale of a business, sellers should be aware of a number of factors before committing themselves to the use of this technique. An auction offers a seller the following advantages:

- Efficacy
- Simplicity
- Control
- Visibility.

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- **Efficacy:** An auction makes it possible to attract the greatest number of interested parties into the activity in the minimum possible time span, lowest possible selling cost, and with a minimum business interruption.
- **Simplicity:** By approaching select target buyers, an auction eliminates the slower, more complicated method of seeking a buyer.
- **Control:** The seller is able to control in a better way the momentum of a particular transaction because of the inherent nature of an auction (take it or leave it). Early setting of time deadlines and ability of the seller to meet its target for dissemination of information to the buyers enable him to control the timing and response in a competitive atmosphere, thereby eliminating bidder delays. If the bidder fails to respond in time, he stands to lose not only the investment opportunity, but also the time, effort, and dollars he has invested to examine this opportunity.
- **Visibility:** Companies that are divesting often go "public" which apart from enlarging the market potential, allows the seller to reach the largest buyer market within the shortest time span. In doing so, the seller sometimes reaches too many potential buyers, who may include a combination of real players and casual opportunities as well as competitors whose motives may not be apparent. The sheer volume of interested parties may lead to virtual elimination of the primary motive for M&A (Merger and Acquisition) auction, that is, speed.

  Apart from advantage, a number of serious negative outcomes may also be associated with an auction. These are:

  - Secrecy
  - Employee unrest
  - Competitive reaction
  - Market perception.
- **Secrecy:** Full disclosure of information to all interested parties is an essential prerequisite for effectively utilizing the process of auction. It is obvious that a company possessing technical and proprietary information to protect will find it impossible to use M&A (Merger and Acquisition) auction as a tool for divesting a division.
- **Employee Unrest:** Both management and labor unrest is created by all divestitures as a result of the cloud of uncertainty hanging over the business. Often, key players in a company panic and quit or attempt to threaten the new owners for lucrative contracts that can cause a buyer to lose interest. The perpetual presence of strangers in offices and plants slows down productivity, creates low morale, and often produces negative feedback that seriously damages the process by giving a danger signal to the buyer interested in retaining the management and maintaining normal relations with all existing employees.
- **Competitive Reaction:** Competitors generally have a field day on getting to know about a public divestiture. Further, if a seller conducts an M&A auction, a large number of competitors turn up at its doorstep. Though the competitors' motives may not always be the same as those of other buyers, in many cases of successful M&A auctions, the successful high bidder has often been a direct competitor. It is quite difficult to coordinate the selling of a division to a direct competitor because it causes considerable alarm, panic and unrest during the process. At the time of an auction, competitors get to look into the interiors of a company giving them an advantage over the new owner. This often leaves the auction buyer feeling uneasy enough to make a drop-out of the auction activity or to pass on the auction as a matter of policy.
- **Market Perception:** The perception of the market should be positive, if the divestment decision is correct for the parent. Generally, for the last five to eight years, the investment community has usually welcomed the strategy of selling of divisions. On the other hand, a cause for concern can arise due to the perception

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within the specific industry in which the divestiture candidate operates. Customers are never sure of who will eventually buy the division and how the new owner's policy and philosophy might affect their past relationship. As a result, customers worry about maintaining an uninterrupted flow of products or services during the process and look towards the competitor as a viable alternative.

17. Strategic partnering takes place when two/more firms develop a relationship that combines their resources, capabilities, and core competencies for certain business functions. There are three major types of strategic partnerships:

- Joint ventures
- Long-term partnerships
- Strategic alliances.
- **Joint Ventures:** Under a joint venture, two/more companies set-up a separate, independent entity for strategic purposes. Such partnerships are usually focused on a specific market objective. The joint venture may continue for a few months/years, and often involve a cross-border relationship. Sometimes, one company may buy a percentage of the stock of the other partner, but not a controlling share (example, joint venture between Germany's Bertelsmann AG and America's Barnes & Noble).
- **Long-term Contracts:** Under this arrangement, two/more companies enter a legal contract for a specific business purpose. Long-term contracts mostly exist between a buyer and a supplier. Many strategists consider them more flexible and less inhibiting than vertical integration. It is usually easier to end an unsatisfactory long-term contract than to end a joint venture.
- **Strategic Alliances:** In this arrangement, two or more organizations share resources, capabilities, or distinctive competencies to achieve some business goal. Strategic alliances often transcend the narrower focus and shorter duration of joint ventures. These alliances may be aimed at world market dominance within a product category.

Examples of Strategic Alliances

- **Toshiba-IBM Alliance:** Sharing the US$1 billion cost to develop a 64mb and 256mb memory chip factory. Once the project is complete, this technology will be shifted to a new IBM plant situated in Virginia.
- **Toyota-GM and TRW Alliance:** GM's Delphi parts division supplies components to Toyota. GM even takes part in Toyota's *keiretsu* strategy meetings. TRW also became part of the Toyota group.

18. The cooperation of two or more individuals or businesses in a specific enterprise and agreeing to share profit, loss and control is known as joint venture. Joint ventures have the following characteristics:

- Contribution by partners of money, property, knowledge, efforts, skills, or other asset(s) to common project
- Joint property interest in the subject matter of the venture
- Right of mutual control or management of enterprise
- Expectation of profit, or presence of adventure
- Right to share the profit
- Usual limitation of the objective to single undertaking or adhoc enterprises.

Companies form joint ventures for the following reasons:

- To augment insufficient financial or technical ability to enter a particular line of business
- To share technology/or generic management skills in organization, planning, and control
- To diversify risks

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- To obtain distribution channels or raw material supply
- To achieve economies of scale
- To extend activities with smaller investment than if done independently
- To take advantage of favorable tax treatment or political incentives (particularly in foreign ventures).

Some of the reasons for abortive lives of joint ventures are as follows:

- The expected technology never developed
- Inadequate preplanning
- Agreements could not be reached on alternative approaches to solve the basic objectives of the joint venture
- Managers with experience in one company refused to share knowledge with their counterparts in the joint venture
- Management difficulties may be compounded because of inability of parent companies to control or compromise on difficult issues.

Other factors

- Cultural differences
- Profitability of foreign operations
- Taxability characteristics of joint venture products
- Importance of financial and other conflicts.

19. The need to reduce the risk of expansion in a foreign environment also acts in favor of joint ventures. In reality, there may often arise a legal requirement for a local partner in some foreign countries, who may contribute valuable information about the local conditions, which may be of vital importance to the success of the venture.

Apart from the above-mentioned reasons, the other reasons for joint ventures can be listed as follows: Augmentation of inadequate financial or technical ability to enter a particular line of business.

To share technology and/or generic management skills in planning, organizing, and control. This may involve two aspects, namely, learning a partner's skills, and upgrading and improving one's own skills.

Learning a Partner's Skills: Firms often enter into joint ventures in order to learn the distinctive skills or capabilities of another firm. It is preferable to make use of skills such as proprietary technologies and specialized processes that may be already available in a potential partner than spending time and money in developing the same. This is commonly observed in many high-technology industries. For example, in order to understand the technology and manufacturing skills required for flat-panel display screens, IBM entered into a joint venture with Toshiba. Similarly, three Japanese firms – Mitsubishi Heavy Industries, Kawasaki and Fuji, have a complex joint venture with the US Company, Boeing. The Japanese firms manufacture key portions of aircraft fuselages and aircraft bodies and contribute important fabrication skills in exchange for access to Boeing's distribution and global marketing network. Thus, while the Japanese firms hope to learn how Boeing organizes and manages its global marketing effort, Boeing seeks to improve its existing highly refined assembly techniques with the help of valuable insights from its Japanese partners.

Upgrading and Improving Skills: Firms having similar skills can improve and augment each other's distinctive competencies by means of joint ventures. In spite of being competing rivals within the same industry, joint venture participants may still benefit from closely cooperating in developing a cutting-edge technology capable of transforming the industry. For example, the joint venture between Fuji Photo Film and Xerox in the 1970s to manufacture photocopiers was for similar reasons.

– To diversify risk.

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- To obtain distribution channels or raw materials supply. Vertical integration is another critical reason for which firms enter into joint ventures. The aim is to enlarge the scope of the firm's operations within a single industry.
- To achieve economies of scale.
- To extend activities with smaller investment than if done independently.
- To take advantage of favorable tax treatment or political incentives (especially in the case of foreign ventures).
- To convert protectionism in certain markets necessitates a joint venture with a local partner in order to counteract it.

Shaping Industry Evolution: Development and commercialization of new technologies that may significantly influence an industry's future direction can be brought about by cooperation between firms in a joint venture. Companies can thus ally with other companies in competing ventures in a race to develop new technology or next-generation industry standard.

20. There are many reasons that encourage companies to set-up ESOP plans for their employees:

- It is a wonderful motivator and can get employees more involved in their duties and focused on corporate performance.
- It is an important means to attract and retain efficient employees, developing long-term attitudes in them.
- As a compensation device, ESOPs offer rewards that can exceed the expectations of employees but are still affordable to the company as they are highly performance driven.
- ESOPs are used for providing retirement benefits to the employees and as succession plan for owners.

Basis for granting ESOPs

Employers/corporates have enough flexibility in determining the amount of grants for various employees. Some companies offer the same number of options, etc., across the board to all employees. Most grant it on the basis of salary and grade levels. It is possible to set/fine tune the grant levels on performance parameters which may be set at an individual level, group, a division level or for the company as a whole. Since, basically ESOPs are a pay for performance rewards, the level of grants should be decided based on the performance and responsibility handled.

21. Basically, an ESOP is a 'share storehouse' for employees. It can borrow from a bank/company/vendor of shares to acquire its shares from an existing shareholder or from the company itself (new issue). It can repay its borrowings from company contributions, dividends or its shares or sales of its shares to employees or to third parties. An ESOP can thus be considered as:

- A means to effect a management and employee buyout.
- A technique to capture a block of shares for distribution among employees over a period of time.
- An internal market (especially in a private firm).
- A means of raising bank loan finance and repaying both capital and interest (through tax deductible contributions to the ESOP) from pre-tax profits.
- An exit route for existing shareholders.

Valuation of shares held by an ESOP

In a quoted company, ESOP shares are valued by reference to the quoted market price per share. In an unquoted company, ESOP shares will need to be valued periodically by using whatever formula is suitable for that company and its trade sector.

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Examples:

- A property company might be valued by reference to net assets.
- A large manufacturing company might be valued by reference to a multiple of post-tax profits.
- A small but fast growing IT company might be valued by reference to turnover.

It is pertinent to be consistent in the method used so that employees can generate confidence in the value of their shares. For most purposes, where there is a tax implication, the value can be agreed with the Inland Revenue. Some companies like to have an annual valuation and base all transfers in the following year on that annual valuation.

22. ESOPs can play a major corporate finance role in transactions, especially in management and employee buyouts.

- **Leveraged Buyouts:** If an ESOP subscribes for new shares by third party finance, and if the firm's contributions to the ESOP are thoughtfully planned to be tax deductible, then both the interest and the principal on the ESOP loan can well be serviced from pre-tax profits, bringing down the firm's total cost of capital. In the European countries, this technique has been used successfully in management buyouts and in established firms seeking development capital.
- **Financial Assistance:** In the US, usually companies are prohibited from providing 'financial assistance' to enable a third party to buy shares. Financial assistance covers company guarantees of third party loans. This affects management buyout companies that require to secure bank loans to the buyout company using the assets of the target company. Financial assistance is allowed in restricted circumstances if a creditor-protection method (known as 'whitewash techniques') is followed, but this can be expensive in some transactions. The 'whitewash' prerequisite is removed if the buyout company raises loan indirectly through an ESOP trust and is capable to claim the exemption from financial assistance that is available to 'employee share schemes'.

23. Factors, both internal and external should be considered while adopting ESOPs.

Internal Factors

- Financial situation
- Tax bracket
- Net worth
- Objectives
- Acceptable level of risk
- Need for cash.

External Factors

Opportunity of investing in other instruments and their return in comparison with risk.

Prospects for an increase in the value of the company's stock.

As an employee of a company whose stock is publicly traded, one may earn benefits. However, the ESOP holder may take decisions with respect to:

- The timing of the exercising of stock option (say, the exercise period for ESOP is 3 months, the holder is to decide the time to exercise the option to the utmost profit)
- Whether to hold or sell acquired shares (they affect the overall financial security).

To maximize the benefits of ESOPs

To maximize the potential benefit, the holder needs to consider numerous factors:

- Quantify the decision after factoring
- Specific tax bracket
- Anticipated values of company stock options

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- Targeted rate of return on other assets
- Coordinate these decisions with respect to the overall financial needs and long-term goals
- Facilitate wealth management, as company stock options will form a significant portion of the net worth of the holder.

However, each corporate compensation award program is unique. Likewise, every individual has likeness and concerns specific to his/her financial situation. Hence, it is important to review the stock option awards in the context of the overall financial picture of the holder.

24. There are two ways in which a private company can go public:

a. Through an initial public offering;

b. Through reverse merger.

Reverse Merger: A "reverse merger" is a method by which a private company goes public. In a reverse merger, a private company merges with a public listed company with no significant assets or liabilities. By merging into such an entity, a private company becomes public.

The benefits of going public through a reverse merger, as opposed to an IPO, are as follows:

- The costs are significantly less than the costs required for an initial public offering.
- The time required is considerably less than for an IPO.
- Additional risk is involved in an IPO in that the IPO may be withdrawn due to an unstable market condition even after most of the up-front costs have been incurred.
- IPOs generally require greater attention from top management.
- While an IPO requires a relatively long and stable earning history, the lack of an earning history does not normally stop a privately-held company from completing a reverse merger.
- The company does not require an underwriter.
- There is less dilution of ownership control.
- It gives a higher valuation for the company.

25. Internal development means that the company's strategists decide to grow the business by adding the required assets (people, buildings, machinery, or whatever) from inside sources rather than outside sources.

One important issue here is the source of the assets, not the source of the capital. It does not matter whether the firm borrows money or uses equity to finance the growth. The moot question is where the firm's managers got the new assets from:

- Did the managers recruit new individuals?
- Did they buy new plant and machinery?
- Did they set-up a new plant?

All the questions discussed above are internal sources. If the managers get these assets from another company through M&As, then it is called as external development.

Strategists of an organization usually pursue growth via internal development when:

- The firm is new or in growth stage
- The industry the firm desires to enter has low entry barriers
- The industry the firm wants to enter is closely related to the existing one
- The firm is keen to accept time frame and development costs of starting the new business
- The firm is keen to accept risks of starting the new business.

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26. The Leveraged BuyOut (LBO), one of the means of going private, has become an increasingly frequent form of corporate restructuring. An LBO is the acquisition of all the stocks or assets of a public limited company by a small group of investors. The acquisition is financed largely by borrowings from the buyout specialists or investment bankers.

Elements of a LBO Operation

The first stage of the operation is involved in raising the required cash for the buy-outs and devising a management incentive system. In the general context, the investor group funds 10 percent of the cash. The top managers of the company as well as the buy-out specialists head this group. This is the equity base of the new firm, the remainder of which is provided by the outside investors. The managers also receive compensations in the form of stock options or warrants. Cash is also raised by borrowing against the company's assets in secured bank acquisition loans, issuing senior and junior subordinated debt.

In the second stage, the organizing sponsor group buys all the outstanding shares of the company and takes it private. The group may even purchase all the assets of the company and forms a new privately held corporation.

The third stage involves the new corporation cutting down the operating costs and changing the marketing strategies to increase the profits and cash flows. Steps taken in this stage include consolidating or reorganizing the production facilities, improving the inventory control and accounts receivables management, changing the product quality, product mix, etc. It may also lay-off some employees to reduce the costs.

The fourth stage is the stage when the investor group has to decide if the company is to be taken public, if the company emerges strong and the goals have been achieved. Such a procedure is referred to as a reverse LBO. It is affected through public equity offering, better known as Secondary Initial Public Offering (SIPO). Such a conversion creates liquidity for the existing stockholders.

27. The price of the stock after the tender offer period remains above the pre-tender offer. Theories like the dividend or personal taxation hypothesis, leverage hypothesis, bondholder expropriation hypothesis, etc., analyse this increase in the value of the share repurchase program. The Information and Signaling Hypothesis is one of them.

The announcement by a company that it would be engaged in a share repurchase program provides information or a signal to the investors. When the announcement is made, it may be taken as the acknowledgement that the company is not having any profitable investments in hand, hence is using the cash to repurchase its own shares. On the other hand, the announcement can also be interpreted as that the company itself is of the opinion that the stocks in the market are undervalued. In such a case, investing in its own stock is the best margin for the company.

Vermaelen in his study estimates the size of the regression coefficient for the premium as 0.6. As per his research, the information and signaling hypothesis carries greater weight in explaining the wealth effect. He, however, does not rule out the leverage effect. If increased leverage also carries out information, then it becomes difficult to segregate the role played by the leverage effect and the signaling effect.

28. Some of the defense strategies that are being practiced by the corporates all over the world are as follows:

Exchange Offer – Offering debt or preference shares in exchange of equity.

Golden Parachute – Provision in the employment contracts of top management providing for heavy compensation for loss of jobs following a change of management. Compensation includes items such as stock options, bonuses, severance pay, etc. Golden parachutes can be in millions of dollars and can cost the firm a lot of money.

Green Mail – Buying back of company shares from the market or a large stockholder at a premium to market price.

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White Knight – To prevent a hostile takeover, a friendly company is invited to takeover the company.

White Squire – A third party, friendly to the management, who helps a company avoid an unwanted takeover without taking over the company on its own.

People Pill – Sometimes, management threatens that, in the event of a takeover, the whole management team will resign. This is especially useful if they are a good management team, losing them could seriously affect the company's performance in the hands of the acquirer.

Poison Pill – This creates securities that provide their holders with special exercisable rights only after a triggering event (a tender offer or accumulation of specified percentage of target shares). Exercise of the rights would make it more difficult and/or costly for an acquirer to takeover the target company against the will of its Board of Directors.

Purchase or sale of the assets of the company to a third company, which makes the target company less attractive to the bidder is a typical strategy.

29. An industry is said to be concentrated, if a less number of companies control most of the production. Industry concentration is generally assessed using either CR4 (four firm Concentration Ratio) or HHI (Hirschmann-Herfindahl Index).

CR4 is the sum of the market shares of the four largest firms.

HHI is the sum of the squared market shares of all the firms.

To cite an example, if there are five firms in an industry with market shares of 40, 20, 15, 10, and 5:

- The CR4 is 85 [40+20+15+10]
- The HHI is 2350 $(40^2+20^2+15^2+10^2+5^2 = 1600 + 400 + 225 + 100 + 25)$.

An industry with a CR4 exceeding 50, or an HHI exceeding 1800, is said to be very concentrated.

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Part IV: Case Studies (Problems)

Case Study 1

Read the case carefully and answer the following questions.

1. Calculate the maximum exchange ratio acceptable to the shareholders of Indian Soaps Ltd., for a post-merger combined P/E ratio (i.e. P/E_{12}) of 10, 11, 12, 13, 15, 17, 20.
2. Compute the minimum exchange ratio acceptable to the shareholders of Best Soaps Ltd., for a post-merger P/E ratio (P/E_{12}) of 10, 11, 12, 13, 15, 17, 20.
3. Draw a graph indicating the influence of PE_{12} on merger gains and losses.
4. Give your observations on the above graph.
5. Compute the Net Present Value of Indian Soaps Ltd., if the merger is considered as a capital budgeting proposal for an exchange ratio of 0.6, 0.7, 0.8, 0.9 with 15% as cost of capital.
6. What are the matters to be considered while deciding the exchange ratio in a merger?
7. What are the legal procedural steps involved in a merger of two companies?

Indian Soaps Ltd.

Indian Soaps Ltd., was established during the year 1973 mainly for the purpose of manufacturing soaps, detergents and other related personal care products. The company was earning profit from the very first year and has been regularly declaring dividends. The company issued three rights issues and two bonus issues and has been maximizing the wealth of the shareholders progressively over the years. The company has a very good Research & Development lab and is constantly upgrading the technology to produce various kinds of soaps and detergents suitable for varied kind of uses. Research is also carried on in the area of cost reduction. The other areas the company had focussed are exports, development of supplies by providing managerial and technical support, revival of sick units by encouraging them to supply high quality products, investment in related industry, etc. The company has developed congenial work atmosphere and has introduced several schemes for the development of workers and staff. This has helped the company to corner about 40% of the market share for the products. The company reported a total earnings of Rs.36 crore with an EPS of Rs.2. The P/E ratio of the company is 12 and the company has total shareholders of 18 crore. While declaring the above successful performance to the shareholders, the Chairman also indicated the various options available with the company for future growth. The Directors earlier discussed at length the Strengths, Weaknesses, Opportunities and Threats (SWOT) of the company to formulate a strategy for the next ten years.

The discussion resulted in a decision to continue in the core sector and increase market share and the company presence in different countries. The Directors suggested putting up two or three more plants and increasing the capacities to manufacture existing products and try new products. As an alternative it was suggested to look for companies in the same line of business and opt for a merger which would immediately give a synergy effect and improve market share. The company came to know of another company named Best Soaps Ltd., with a total earnings of Rs.12 crore. Its EPS was Re.1 and the P/E ratio was 8. The total shareholders were of 12 crore. Through a discussion with Best Soaps Ltd., it was understood that it would also be willing to merge with Indian Soaps Ltd., if the exchange ratio was satisfactory.

The company (Indian Soaps Ltd.) also wanted to analyze the proposal from the capital budget's point of view and prepared the expected cash flows from the equityholder's point of view. The company's expectation in cash flow is Rs.40 crore, Rs.44 crore, Rs.47.2 crore, Rs.49.6 crore and Rs.52 crore for the next 5 years and beyond 5 years, it is expected to grow at a compound rate of 5% per year. At the time when the company merges with Best Soaps Ltd., the combined cash flow shall be Rs.64 crore, Rs.72 crore, Rs.82 crore, Rs.86 crore and Rs.90 crore beyond which the cash flow will grow at a compound rate of 6% per year.

Though the company could work out expected cash flows, it is not very sure of the P/E ratio of the combined entity and the best exchange ratios so that the shareholders of both the companies are satisfied.

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Case Study 2

Read the case carefully and answer the following questions.

1. Value of the company using the discounted cash flow approach.
2. Determine the value created by the modernization strategy. What conclusions can you draw? Assume that all flows occur at the beginning of the year.

Ashok Rubber Works

Ashok Rubber Works is an established company in the Rubber Industry, engaged in the manufacture of Rice Polishers for the small scale sector. The financial position of the company as on 31st March, 2000 (year 0) was as follows:

		Rs. in crore
Liabilities		
Net worth		1.86
Bank borrowings for working capital		5.25
Sundry creditors		6.23
Others		0.03
		13.37
Assets		
Net fixed assets		
Gross block	2.18	
Less: Accumulated depreciation	1.00	1.18
Receivables		4.66
Current Assets		7.53
		13.37

The company's operating incomes and expenses were as follows: (Year 0)

	Rs. in crore
Turnover	41.01
Expenses	
Material, etc.	15.00
Salaries and Wages including benefits	8.00
Selling and Administrative expenses	8.00
Depreciation	0.10

The company has no non-operating assets.

The company is planning a modernization program where it proposes to replace two hand fly presses with two daylight hydraulic presses. Since the space is adequate for installation of the new machinery, no additional construction is required. The total cost of the modernization program is Rs.2.81 crore for additional investment in plant and machinery and miscellaneous assets. No further expansion/ modernization is planned in the next 3 years. For developing the financial projections, the following assumptions may be made:

i. After modernization, the company will have the capacity to produce 3,60,000 rice polishers per annum at the rate of Rs.3,200 each.

ii. The expected capacity utilization is 70% for year I, 80% for year II and 90% for year III onwards.

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iii. Cost of material and utilities will be Rs.61 crore for year I, Rs.69.18 crore for year II and Rs.69.50 from year III onwards.

iv. Salaries and Wages including benefits are projected at Rs.9 crore for year I and are expected to increase by 2% every year.

v. Administrative and Selling overheads are expected to be 5% of sales revenue.

vi. Depreciation as per WDV method works out to Rs.1.03 crore in the first year, Rs.0.72 crore in the second year and Rs.0.48 crore in the third year.

vii. Financial expenses are estimated at Rs.2.16 crore in year I, Rs.2.42 crore in year II and Rs.2.38 crore in year III.

viii. Working capital investment is expected to be Rs.15.68 crore for year I, Rs.17.71 crore for year II and Rs.17.79 crore for year III.

ix. The company will have an after-tax non-operating cash flow of Rs.20 crore in year I, Rs.30 crore in year II and Rs.30 crore in year III.

x. The company will pay tax @ 30% p.a.

Supposing the company had not gone in for this modernization strategy,

- The sales will remain constant at Rs.41.01 crore.
- Cost of material and utilities will remain same.
- Salaries and Wages will increase by 20%.
- Selling and Administrative overheads will remain unchanged at 20% of sales.
- Depreciation charges will be equal to Rs.0.07 crore.

Additional Information

a. The market value of equity at the end of year 0 is Rs.2.5 crore. The imputed market value of debt (taken for the modernization) is Rs.1 crore.

b. The company's stock has a beta of 0.5.

c. The risk-free rate of return is 12% and the market risk premium is 8%.

d. The post-tax cost of debt is 9%.

e. The free cash flow is expected to grow at a rate of 10% p.a. after three years.

Case Study 3

Read the case carefully and answer the following questions.

1. Keeping in view the structure of the Indian Tyre Industry, do you feel that the additional investments are justified? Explain with reasons.

2. Explain briefly the different techniques available for valuing a company. Which method do you recommend in this case?

3. Valuation is often a very subjective exercise and depends a great deal on intuition and fundamental understanding of the business, going beyond mere numbers. What are the qualitative parameters which you consider to be important in this case?

4. Make use of the discounted free cash flow approach to value the company. Clearly state any assumptions you make.

5. Establish the equivalence of the Growing Free Cash Flow Perpetuity Method of estimating the continuing value of the firm and the Value Driver Method. What is/are the major assumption(s) in establishing this equivalence?

6. Clearly state the key consideration in valuing assets and liabilities under the Adjusted Book Value Approach.

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A major tyre manufacturer based in North India has framed aggressive plans for expanding its market share. The company has plants strategically located in Faridabad, Haryana, Indore and Madhya Pradesh. It is now planning to set-up a manufacturing base near Bangalore to cater to customers based in Hosur, a fast emerging hub for the automotive industry in South India (Hosur is located close to Bangalore, near the Tamil Nadu border). After toying with the idea of a green field project, the company has decided in favor of an acquisition, mainly to get faster market access.

The company has undertaken a detailed study of prospective takeover targets and finally identified Eagle Tyres Ltd., a Bangalore based manufacturer as the company which fits in best with its strategic goals. After having collected the relevant information, the company is now faced with the case of arriving at a reasonably correct value of Eagle Tyres in order to begin takeover negotiations.

Eagle Tyres Ltd., which had been set-up in 1974, mainly caters to the two and three wheelers as well as the passenger car segment through the production and sale of tyres and tubes. The equity shares of the company (Face value Rs.10) are listed on the Bangalore, Madras and Bombay Stock Exchanges.

The company proposes to increase the capacity from 2.5 lakh tyres per month to 3.1 lakh tyres. The company's major competitors in the industry are Falcon Tyres and Srichakra Tyres both catering to the same segments. Competition also comes from the retreading industry which eats into 20-25% of the demand for tyres.

The company's income statement and balance sheet are given in Exhibits I & II respectively. Additional information is given in Exhibit III.

Indian Tyre Industry

The Indian Tyre Industry comprises of approximately 25 producers. Of these, the top eight contribute to almost 90% of the industry turnover. For sales of at least 28 million tyres per annum, the market is worth more than Rs.9,500 crore. The industry is fragmented, and the entry of multinationals has further fragmenting it. The 25 players also seem quite large for such a small industry. The players are fighting for market shares. Consolidations and sell-outs are likely to take place. Leading players need to rework their strategies to survive and grow.

The industry is led by five to six players, MRF being the top most. During the past few years, increased rubber prices and high competition have almost killed the weaker players. Consequently, the demand supply position became stable helping the major players to operate at optimum capacities. Of the total tyre sales in unit terms, MRF accounts for the largest share of 30 percent, Modi Rubber and Modistone hold 12.77 percent, Apollo Tyres 9.61 percent, and JK Industries 5.65 percent. In the value market, MRF accounts for 23.36 percent and Ceat 16.60 percent. Truck and bus tyres is the largest segment of the Indian tyre industry. Other products include LCV, car and tractor-rear tyres, each accounting for 6-8% of tyre sales.

The tyre industry has been growing at the rate of 8 to 10 percent over the last five years. By the end of the century, the industry is expected to register 15 percent growth per annum, and rise to Rs.12,000 crore. The market for passenger cars and LCVs is expected to grow at the rate of 20 percent per annum.

Peculiar Trend

Some of the leading tyre manufacturers have changed their accounting years in the past. Apollo changed from October to March 1990-91, MRF from March to September 1989-90, Ceat from June to September 1993-94, Modi Rubber from March to June 1992-93, and JK from June to December 1995-96. Why have been the companies doing so is a question left unanswered.

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Brands of the Leaders

With tyres having a commodity status, the companies are competing to position their brands well. Nearly 5 percent of the total costs of the companies is on advertising and marketing. Ceat is now concentrating on its tyres business with brands 'Samrat' and 'Secura'. Apollo's 'Black Cat' brand is highlighted for better road grip, and the brand 'Amazer' for its technology. Goodyear India launched three international brands: 'Power Luck', 'GPS2' and 'NCT2' in 1996. And of course, the leading brands are MRF's 'Nylogrip', 'Zigma', and the latest 'Zapper'.

Segmentation

The truck tyres segment accounts for nearly 80 percent of the total market in terms of value, and 38 percent by number. Almost 7 million truck and bus tyres are sold every year. The segment faces strong competition from retreading. The segment is growing annually at the rate of 8 percent. Apollo leads the segment with a share of 22 percent, immediately followed by MRF at 18 percent. However, in the total tyre market, Apollo is way behind MRF accounting for just 9 percent. Ceat holds 16 percent. Apollo is concentrating on the truck and bus segment, government and defence vehicles, and the state transport units. The company improved its marketshare in a very short period of time by segmenting the truck tyre market and introducing different tyres for overloaded, regular and underloaded trucks.

Car radials account for 10 percent of the 4.2 million car tyre market. The car segment had recorded a growth of 8.5 percent in FY '97 as compared to FY '96. Car radials yield the highest returns, and is also expected to grow faster than the other segments. For the same input costs, radials give 35 to 40 percent more returns than the normal cross-ply tyres. Unlike truck tyres, brands play an important role in the case of car tyres.

MRF dominates the car tyres segment. The company has a 1.2 million radial tyres per annum facility. Ceat-Goodyear alliance is also expected to produce almost the same quantity. By the entry of the international models, the usage of radial tyres has increased tremendously. Except for Mercedes, all other car manufacturers, including GM and Ford, buy MRF radial tyres. The two new models, Mitsubishi Lancer and Honda City, have also decided to buy MRF tyres.

Apollo had signed an agreement with Continental AG, the German tyre manufacturer for the manufacture of car radials in the first half of 1996. The company is a dominant player in truck and bus tyres segment. Apollo is now trying to grip the car tyre segment. The company is targeting to cross the Rs.2,000 crore mark by the end of FY '99.

End-User Markets

The end-user tyres market consists of mainly the Original Equipment Manufacturers (OEMs) and replacement market, the latter holding a much larger share. The OEMs are few large buyers who give a lot of importance to price and quality. In the OEM market, tie-ups with manufacturers directly influence the volumes. The margins are comparatively low, and the costs are spread on the volumes. On the other hand, the demand in the replacement market is characterized by many buyers. These buyers are supplied with the products through a retail network. The buyers in the replacement market are influenced by the price differentials and marketing plays a very important role in the market. The demand is dependent on the vehicle population, and the life of the product, which is six to eight months in the case of truck tyres. But retreading has been eating into the market of replacement tyres. For just 20 percent of the cost of a new tyre, the old tyres can be added with a new tread, increasing the life of the tyre to as much as a new one.

The growth of Indian economy has led to an increase in passenger traffic and movement of goods. Considering the bottlenecks in developing the railway system, the share of the roadways was increased in the overall traffic movement. This led to higher demand for commercial and passenger vehicles, helping the automobile industry to come out of the recessionary phase. This has led to an increase in demand for tyres by OEMs. The rise in the vehicles, has also enlarged the replacement market. Global tyre majors are finding the market attractive. Many joint ventures were set-up, leading to an increase in the overall capacity. This affected the margins of the players.

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Exhibit I

Income Statement of Eagle Tyres Ltd. for the year ended 31.3.2000

(Rs. in crore)

Net Sales		32.86
Raw materials and Stores	20.25	
Power and Fuel	1.52	
Selling expenses	1.87	
Employee related expenses	2.78	
Admn. expenses	1.10	
Other expenses	0.15	
Total		27.67
PBDIT		5.19
Total interest		1.75
Lease rentals		1.71*
PBDT		1.73
Depreciation		0.39
PBT		1.34
Other income		0.13
Tax		0.37
PAT		1.10

* This includes penal interest of Rs.0.58 crore. Total term liabilities are to be repaid in 5 equal annual installments.

Exhibit II

Statement of Assets & Liabilities of Eagle Tyres Ltd. as on 31.3.2000

(Rs. in crore)

Share Capital	3.05	Land	0.11	
Reserves	0.15	Building	2.00	
Term liabilities		Machinery	4.67	
Banks	5.53	Others	0.36	
Others	0.75	Gross Fixed Assets		7.14
Current liabilities	14.65	Acc. depreciation		3.27
		Net Fixed Assets		3.87
		Capital WIP		0.69
		Total Fixed Assets		4.56
		Inventories		5.69
		Receivables		7.74
		Others		6.14
Total	24.13	Total		24.13

Exhibit III

The details of the expansion program are as follows:

- **Capital Cost**

(Rs. in crore)

Site Development Expenses		0.18
Building		1.88
Plant & Machinery		
Own	– 12.53	
Lease	– 10.00	22.53
Contingency & Pre-operative Expenses		3.55
Preliminary Expenses		0.31
Working Capital Margin		1.12

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- Contingency & Pre-operative expenses are allocated fully to building, site development and own machinery, increasing their depreciable capital cost correspondingly.
- Capital expenditure thus calculated on building and site development of Rs.2.56 crore and Plant & Machinery of Rs.1.69 crore will be incurred in 2002 AD and the balance Rs.13.89 crore in 2003 AD.
- **Pattern of Financing**

(Rs. in crore)

Additional Equity (issued at par)	8.87
Term Loans	10.70
Lease Finance	10.00

- Production & Sales Statement (after the expansion program)

(Rs. in crore)

	2001 (1)	2002 (2)	2003 (3)	2004 (4)	2005 (5)	2006 (6)
Production (Nos. in lakh)						
Scooter	2.25	3.00	5.44	7.80	8.48	9.15
Auto rickshaw	0.45	0.60	1.09	1.56	1.70	1.83
Moped	2.70	3.60	6.53	9.36	10.17	10.98
Motor Cycles	3.60	4.80	8.70	12.48	13.56	14.60
Net Sales (Rs. crore)	55.61	58.58	79.66	107.32	120.07	122.24
Raw material cost	24.94	26.25	33.80	44.10	48.94	48.94
Consumables	0.62	0.67	0.89	1.17	1.29	1.30
Power	1.10	1.16	1.59	2.15	2.40	2.46
Employee related costs	2.90	3.04	3.96	4.42	4.98	5.57
Admn. expenses	1.16	1.25	1.66	1.82	1.94	2.07

- **Selling Expenses**
  - Royalty at 2.5% on net sales value payable to Dunlop India Ltd.
  - Commission at 2% on net sales value.
  - Advertisement and other selling expenses at 1% on net sales value.
- **Working Capital Requirements**

(Rs. in crore)

	2001	2002	2003	2004	2005	2006
Existing working capital*	7.89	9.91	10.45	13.92	18.42	20.42
Increase in working capital	2.02	0.53	3.47	4.50	2.01	0.37
Existing margin*	2.33	2.48	2.61	3.48	4.60	5.11
Increase in margin	0.14	0.13	0.87	1.12	0.50	0.09
Existing bank finance*	6.60	7.43	7.83	10.44	13.81	15.32

* Existing figures based on detailed project report which was prepared after 31.3.98.

- Bank finance, both old and new, carry interest at 18% per annum.
- Other financial expenses.

(Rs. in crore)

	2001	2002	2003	2004	2005	2006
Lease charges	1.80	1.55	3.20	3.30	3.30	3.30
Interest on term loans (18%)	0.71	0.60	1.46	2.28	1.84	1.41
Depreciation	0.50	0.69	2.07	2.09	2.12	2.14

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- The effective tax rate for the company is 25%. There is no change in deferred taxes.
- The stock is currently quoting at Rs.21 per share. The stock has a beta of 0.80.
- The risk-free rate of return is 11.5% and the market risk premium is 9%.
- The free cash flow is expected to grow at a rate of 15% p.a. after 6 years.

Case Study 4

Read the case carefully and answer the following questions.

1. What kind of a merger would it be if Friedman decides on Maryman for the merger? What as per Drucker are the rules for a successful merger? What synergies would Friedman experience after its merger with Ramico Industries when compared to Maryman?
2. Compute the market price per share of Ramico.

   Data given:

   Rate of return on 364 days T-Bills – 8%; expected return on the market – 13%; interest rate on debt – 13%; tax rate – 50%.
3. What would be the effect on the EPS of Friedman if it decides to merge with Ramico?
4. Compare the merger of Friedman-Maryman with Friedman-Ramico. Which firm should Friedman Corporation decide to acquire?
5. Comparing the alternative firms on the basis of gain in value is one of the methodologies for the management analysis of the merger activity. What are the principles that the methodology follows?

Friedman Corporation, established in 1996 has a big name in the manufacturing of electrical items. Since its establishment, it has given more emphasis on the production of Step down Transformers. However, due to low internal profitability rate and negative investment opportunities, Friedman Corporation is exploring acquisitions as an avenue for growth and investment opportunities. After extensive search, Friedman is focusing on two particular firms – Maryman Biscuits and Ramico Industries Ltd. for various reasons.

Maryman Biscuits, the manufacturer of biscuits is a fast growing company. It has strong marketing and distribution network in South India. The Research Department has given a report that the company can extend its network gradually to some Central Indian states.

Ramico Industries, the manufacturer of copper, has a better profitability record than Maryman Biscuits. Moreover, its cost of production is lesser than the industry cost.

Given below is a table of relevant data:

	Book value per share (Rs.)	Price/earnings ratio	Number of shares (millions)	Debt ratio (%) (D/E)	Beta for existing leverage	Internal profitability rate(r)	Investment rate (b)	Growth Rate (g)
Friedman	30	6.80	6	20	1.5	0.04	0.2	0.006
Maryman	70	13.70	2	60	1.6	0.13	1.7	0.20
Ramico	70	10.66	2	40	1.7	0.15	1.2	0.16

A period of ten years is estimated for the duration of supernormal growth for the merged firm.

The Accounting Balance Sheets

(Rs. million)

	Friedman	Maryman	Ramico
Debt	36	30	19
Equity	180	50	48
Total Assets	216	80	67

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The following estimates are made of the new financial parameters of the combined firms

	NOI	R	b	g_s
Friedman/Maryman	23	0.164	0.8	0.15
Friedman/Ramico	19	0.155	0.8	0.14

Accounting Balance Sheet (Rs. Million) after the merger

	FM	FR
Debt, B	66	55
Equity, S	100.75	89.82
Value, V	166.75	144.82

Case Study 5

Read the case carefully and answer the following questions.

1. Explain LBOs and the elements of a typical LBO operation.

2. The LBOs experience large gains. What is the evidence of the same?

3. From the data given in the case history, calculate the Free Cash Flow to Equity Holders (FCFE) and the firm (FCFF).

4. Calculate the Weighted Average Cost of Capital (WACC) using a target debt to equity ratio of 1:1.

5. Should Communique Enterprises go for the proposed LBO? Justify your answer with necessary calculations.

6. What are the success factors of an LBO deal?

Wilmart is considering the acquisition of Communique Enterprises (CE), a privately owned beverage packaging company. CE constantly upgrades its technology. It has a good managerial and technical workforce. Revenues of CE in the year 1 are expected to be Rs.40,00,000 with the operating expenses before depreciation being Rs.31,00,000. Revenue and operating expenses are projected to grow at 15% per year for the coming 5 years and 10% annually thereafter. Capital expenditure and depreciation in the year 1 amount to Rs.350,000 and Rs.300,000, respectively. It is estimated that the growth in the capital expenditure and depreciation would be the same as revenue through the forecast period. The annual change in working capital is expected to be 5% of the revenue based on the firm's historical performance. CE does not pay any dividends during the forecast period.

After a brief discussion with local lenders, it was decided to consider the LBO financing with Rs.2,000,000 in equity capital and Rs.6,500,000 in debt. Thus, if the transactions were completed at the end of year 0, CE would have a capital structure consisting of Rs.2,000,000 in equity and Rs.6,500,000 in debt. The interest rate on the debt is 10% annually. Principal repayments on the debt will be Rs.600,000 annually throughout the forecast period. At the end of the fifth period, the remaining debt is expected to be refinanced at the same rate of interest in perpetuity.

Based on an examination of similar firms, the beta of the firm in the first year of operation is estimated to be 3.00 and the cost of equity to be 25.5%. The spread between the return on stocks and the risk-free rate is 5.5 %. The firm comes under the tax bracket of 40%.

Despite its high leverage, Nexus pays some taxes from the outset. Its tax liability grows rapidly due to the firm's rapid pay-off of debt. In estimating its WACC, the LBO firm uses its long-term target debt-to-equity ratio of Rs.1 of equity for each rupee of debt to calculate the weights associated with debt and equity. This is the ratio with which Nexus believes to attract a strategic buyer or investor in a secondary public offering.

Part IV: Case Studies (Solutions)

Case Study 1

1. Indian Soaps Ltd. would insist in preserving the wealth of its shareholders. Relevant information for the firms Indian Soaps Ltd., and Best Soaps Ltd., is as follows:

	Indian Soaps Ltd.	Best Soap Ltd.
Total Earnings, E (Rs.)	36.00 crore	12.00 crore
No.of Outstanding Shares, S	18.00 crore	12.00 crore
Earnings Per Share, EPS (Rs.)	2.00	1.00
Price Earnings ratio, PE	12.00	8.00
Market Price Per Share, P (Rs.)	24.00	8.00

The maximum exchange ratio acceptable can be derived from the formula

$ER_1 = -S_1/S_2 + (E_1 + E_2)PE_{12}/P_1S_2$

Where,

ER_1 = Exchange ratio

P = Price per share

S_1 = Number of outstanding shares of Indian Soaps Ltd.

S_2 = Number of outstanding shares of Best Soaps Ltd.

PE_{12} = Price earning multiple of the merged entity.

Plugging the data given into the equation we get

$ER_1 = -18/12 + ((36 + 12)/(24 \times 12))PE_{12}$

$= -1.5 + 0.167\ PE_{12}$

The maximum exchange ratios acceptable to the shareholders of Indian Soaps Limited for the given PE multiples are as follows:

PE_{12}	10.00	11.00	12.00	13.00	15.00	17.00	20.00
Maximum ER_1	0.17	0.34	0.50	0.67	1.01	1.34	1.84

2. Minimum exchange ratio acceptable to the shareholders of Best Soaps Ltd. will be:

$ER_2 = P_2S_1/[(PE_{12})(E_1 + E_2) - P_2S_2]$

$ER_2 = 8(18)/[PE_{12}(48) - (8 \times 12)]$

$= 144/[48PE_{12} - 96]$

For the given PE multiples minimum exchange ratios acceptable will be:

PE_{12}	10.00	11.00	12.00	13.00	15.00	17.00	20.00
Minimum ER_2	0.38	0.33	0.30	0.27	0.23	0.20	0.17

3.

PE_{12}	ER_1	ER_2
10.00	0.17	0.38
11.00	0.34	0.33
12.00	0.50	0.30
13.00	0.67	0.27
15.00	1.01	0.23
17.00	1.34	0.20
20.00	1.84	0.17

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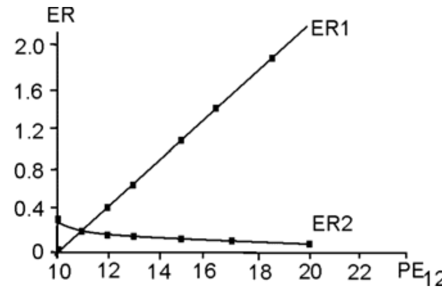

4. The lines ER_1 and ER_2 intersect at x where $ER_1 = ER_2 = 0.333$. Four quadrants I, II, III, IV are formed by the two lines ER_1 and ER_2. Given the wealth constraint, the actual exchange ratio should lie in quadrant I in which shareholders of both the firms benefit from the merger. In the remaining three quadrants shareholders of either or both the firms will suffer a loss of wealth. Hence, they do not represent feasible quadrants.

5. Computation of net present value of Indian Soaps Limited if the merger is considered as a capital budgeting proposal for an exchange ratio of 0.6, 0.7, 0.8, 0.9

Determination of present value PVi of post-tax cash flows of Indian Soaps Limited using discount rate of 15%.

Year	Cash flows (Rs. in crore)	PVIF @15%	Present value (Rs. in crore)
1	40.00	0.870	34.80
2	44.00	0.756	33.27
3	47.20	0.658	31.03
4	49.60	0.572	28.36
5	52.00	0.497	25.85
Beyond 5	546.00	0.497	271.36
			424.67

Estimation of equity related cash flows of the merged entity. Cash flow beyond 5 years will grow at a compounded growth rate of 6%.

Year	Cash flows (Rs. in crore)	PVIF @15%	Present value (Rs. in crore)
1	64.00	0.870	55.68
2	72.00	0.756	54.44
3	82.00	0.658	53.96
4	86.00	0.572	49.19
5	90.00	0.497	44.73
Beyond 5	1,060.00	0.497	526.82
			784.82

Ownership position of shareholders of Indian Soaps Ltd., in the merged entity.

Number of outstanding shares of Indian Soaps Ltd., before merger = 18 crore.

Number of outstanding shares of Best Soaps Ltd., before merger = 12 crore.

Ownership Position Exchange Ratio.

$$OP = \frac{N_I}{N_I + ER(N_B)}$$

Where,

OP	=	Percentage ownership of shareholders of Indian Soaps in merged firm
N_I	=	No. of outstanding equity shares of Indian Soaps
ER	=	Exchange Ratio
N_B	=	No. of outstanding equity shares of Best Soaps.

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Exchange Ratio	Ownership Position
0.60	0.714
0.70	0.682
0.80	0.652
0.90	0.625

NPV for different exchange ratios

$NPI(I) = OP[PV(I)^1] – PV(I)$

Where,

$PV(I)^1$ = Present value of combined firm.

Ownership Position	Present Value
0.714	135.69
0.682	110.58
0.652	87.03
0.625	65.84

6. Matters to be considered while deciding the exchange ratio in a merger. The commonly used basis for establishing the exchange ratio are: earnings per share, market price per share, and book value per share.

Earnings per share: While earnings per share reflect prima facie the earning power, there are some problems in an exchange ratio based solely on current earnings per share of the merging companies because it fails to take into account the following:

i. The difference in the growth rate of earnings of the two companies.

ii. The gains in earnings arising out of the merger.

iii. The differential risks associated with the earnings of the two companies.

Moreover, there is the measurement problem of defining the normal level of current earnings. The current earnings per share may be influenced by certain transient factors like a windfall profit or an abnormal labor problem or a large tax relief.

Market price per share: The exchange ratio may be based on the relative market prices of the shares of the acquiring firm and the target firm. When the shares of the acquiring firm and the target firm are actively traded in a competitive market, market prices have considerable merit. They reflect current earnings, growth prospects and risk characteristics. When the trading is merger, market prices, however may not be very reliable and in the extreme case, market prices may not be existent if the shares are not traded. Another problem with market prices is that they may be manipulated by those who have a vested interest.

Book value per share: The relative book values of the two firms may be used to determine the exchange rate. The proponents of book value contend that it provides a very objective basis. This, however is not a very plausible argument because book value if influenced by accounting policies will reflect subjective judgments. There are still more serious objections against the use of book value.

i. Book values do not reflect changes in the purchasing power of money.

ii. Book values often are highly different from the economic values.

7. Legal procedures involved in merger of two companies.

a. **Examination of object clauses:** The memorandum of association of both the companies should be examined to check if the power to amalgamate is available. The objects clause of the transferee company should permit it to carry on the business of the transferor. If the above mentioned requirements are lacking, necessary approvals of the shareholders, Board of Directors and Company Law Board are required.

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b. **Intimation about the merger proposal:** The stock exchanges where both the companies are listed should be intimated about the merger proposal. Copies of all notices, resolutions, and orders should be mailed to the concerned stock exchanges.

c. **Approval of the proposal:** The draft of amalgamation proposal should be approved by both the Boards and once such approval is obtained, an application should be made to the High court so that it can convene the meetings of shareholders and creditors for passing the amalgamation proposal.

d. **Notice to the shareholders:** A notice and explanatory statement of the meeting as approved by the High court should be sent to the shareholders so that they get 21 days advance intimation. The notice should also be published in two newspapers (one English and one vernacular). An affidavit confirming that the notice has been dispatched to the shareholders/creditors and that the same has been published in newspapers should be filed in the court.

e. **Holding of meetings of shareholders and creditors:** A meeting of shareholders should be held by each company for passing the scheme of amalgamation. At least 75% (in value) of shareholders, in each class who vote either in person or by proxy, must approve the scheme of amalgamation. Likewise, in a separate meeting, the creditors of the company, at least 75% (in value) of the creditors who vote, either in person or by proxy, must approve of the amalgamation scheme.

f. **Petition to the Court:** Once the scheme is passed by the shareholders and creditors, the companies involved in the amalgamation should present a petition to the court for confirming the scheme of amalgamation. The court will fix a date of hearing. A notice about the same has to be published in two newspapers. It is also to be served to the Regional Director, Company Law Board. After hearing the parties concerned and ascertaining that the amalgamation scheme is fair and reasonable, the court will pass an order sanctioning the same. However, the court is empowered to modify the scheme and pass orders accordingly.

g. **Filing the order with the Registrar:** Certified true copies of the court order must be filed with the Registrar of companies within the time limit specified by the court.

h. **Transfer of assets and liabilities:** After the final orders have been passed by both the High Courts, all the assets and liabilities of the amalgamating company will, with effect from the appointed date, have to be transferred to the amalgamated company.

i. **Issue of shares and debentures:** The amalgamated company, after fulfilling the provisions of the law, should issue its own shares and debentures. The new shares and debentures so issued will be listed on the stock exchange.

Case Study 2

1. Value of the company using the discounted cash flow approach.

Computation of Free Cash Flow

After modernization the company will have the capacity to produce 3,60,000 rice polishers per annum at the rate of Rs.3,200 each.

(Rs. in crore)

Year	1	2	3
Revenues:			
Capacity utilization	70%	80%	90%
Sales	80.64	92.16	103.68
Total revenues	80.64	92.16	103.68
Expenses:			
Materials and Utilities	61.00	69.18	69.50
Salaries and Wages	9.00	9.18	9.36
Administrative and Selling overheads @ 5%	4.03	4.61	5.18
Total operating expenses	74.03	82.97	84.05

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(Rs. in crore)

Year	1	2	3
EBDIT	6.61	9.19	19.63
Depreciation	1.03	0.72	0.48
EBIT	5.58	8.47	19.15
Tax	1.67	2.54	5.75
NOPLAT	3.91	5.93	13.40
Gross cash flow	4.94	6.65	13.88
Gross investments	6.30	2.03	0.08
Free cash flow from operations:	–1.36	4.62	13.80
(Gross cash flow minus gross investments)			
Non-operating cash flow	20.00	30.00	30.00
Free cash flow	18.64	34.62	43.80

Gross investments = Increase in working capital (current assets) + capital expenditure + increase in asset

(Rs. in crore)

Current assets in the beginning of the period	12.19	15.68	17.71
Investment in working capital at the end of the year	15.68	17.71	17.79
Increase in working capital	3.49	2.03	0.08
Capital expenditure	2.81		
Increase in any other asset			
Gross investment	6.30	2.03	0.08

Cost of capital = Weight of equity x Cost of equity + Weight of debt x Cost of debt

The weights of equity and debt based on market values are as follows:

Weight of equity	2.5/3.5	0.71
Weight of debt	1/3.5	0.29
Post-tax cost of debt is given as		9.00%

Cost of equity using the capital asset pricing model

Cost of equity = Risk-free rate + (Beta of the company's stock x Market risk premium)

= 0.12 + (0.5 x 0.08) = 16.00%

= (0.16 x 0.71) + (0.09 x 0.29) = 14% (approx)

The cost of capital will be 14.00%.

Estimation of Continuing Value

The projected free cash flow for year 3 is estimated to be 43.80 crore. Thereafter it is expected to increase at a rate of 10% p.a. The expected continuing value at the end of 3 years is given by the formula.

$$CV3 = \frac{FCF_4}{k - g}$$

= 43.80(1.10)/(0.14 – 0.10) = Rs.1204.5 crore

Value of Equity = Discounted free cash flow during the explicit forecast period + Discounted continuing value + Value of non-operating assets – Market value of debt claims.

Discounted free cash flow during the explicit forecast period

$= 18.64/(1.14) + 34.62/(1.14)^2 + 43.80/(1.14)^3$

= 16.35 + 26.64 + 29.56

= Rs.72.55 crore

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Discounted continuing value = $1204.50/(1.14)^3$

= Rs.812.75 crore

Value of non-operating assets = 0.00

Less: Market value of debt claims: = 1.00

Value of equity = 72.55 + 812.75 – 1

= Rs.884.3 crore.

2. Value created by the modernization strategy:

Determination of the value created by a new strategy

(Rs. in crore)

	Income statement projections				
	Current Year 0	1	2	3	Residual Value 3+
Sales	41.01	80.64	92.16	103.68	103.68
Less:					
Material, etc.	15.00	61.00	69.18	69.50	69.50
Salaries and Wages	8.00	9.00	9.18	9.36	9.36
Selling and Administration expenses	8.00	4.03	4.61	5.18	5.18
Depreciation	0.10	1.03	0.72	0.48	0.48
Interest	0.68	2.16	2.42	2.38	2.38
Profit before tax	9.23	3.42	6.05	16.77	16.77
Tax	2.77	1.03	1.82	5.03	5.03
Profit after tax	6.46	2.39	4.24	11.74	11.74
Balance Sheet Projections					
Fixed assets	1.18	3.99	3.99	3.99	3.99
Current assets	12.19	15.68	17.71	17.79	17.79
Total assets	13.37	19.67	21.70	21.78	21.78
Cash Flow Projections					
Profit after tax (1)		2.39	4.24	11.74	11.74
Depreciation (2)		1.03	0.72	0.48	0.48
Capital expenditure (3)		2.81	0.00	0.00	0.00
Increase in current assets (4)		3.49	2.03	0.08	0.00
Operating cash flow (1 + 2 – 3 – 4)		–2.88	2.93	12.14	12.22
Present value factor at 14% which is the cost of capital		0.877	0.759	0.675	
Present value of operating cash flow		–2.524	2.252	8.195	
Present value of operating cash flow stream	7.922				
Residual value 12.22/0.14	87.29				
Present value of residual value	$\frac{87.29}{(1.14)^3}$ = 58.92 crore				
Total shareholder value	Present value of operating cash flow stream + Present value of residual value less market value of debt = Rs.65.84 crore				
Pre-strategy value	Cash flow before new investment/cost of capital less market value of debt $\frac{5.432}{(0.14)} - 1$ = Rs.37.8 crore				
Value of the strategy	65.84 – 37.8 = 28.04 crore				

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Case Study 3

1. So far, the Indian tyre industry has been operating in the country as a protected industry from outside competition. But the waves of liberalization have hit the tyre industry too. The industry at present seems to be going through a consolidation phase and adjusting to the changed competitive scenario. In fact, major competition exists in the truck tyre and the car tyre segments. The two wheeler segment does not seem to have been hit by competition so much. However, this scenario may not last long even for the two wheeler segment.

The additional investment by the North India based large tyre manufacturer may give him an early lead in the competition, in terms of its national presence of manufacturing and distribution network. He may be able to use such strengths to his advantage in the future to fight competition. The existing overcapacity in the market should, however, make the company little more cautious in such expansion plans.

2. There are several methods of corporate valuation. There is in fact no method particularly suitable or particularly unsuitable for a specific company or industry.

Traditionally, the comparable company approach and the adjusted book value approach were commonly used. In the last few years, however, the discounted cash flow approach has received greater attention, emphasis and acceptance. This is possibly because the discounted cash flow approach is focussed more on the profitability and future cash flows. Such concepts are nowadays considered more objective and accurate.

Even in this case the discounted cash flow approach is suggested so that an estimate can be made about the present value of future cash flows of the company.

3. The valuation of a company based only on quantitative methods can give a very unaccurate picture of the true value of the company, unless certain qualitative factors are also given due consideration. Some of the qualitative factors which should be considered in this case are given below:

a. The strength of the brand name of the company's tyres.

b. Quality of the product.

c. The competence of the management of the company.

d. Distribution network and sales force motivation.

e. The availability of raw material and other inputs such as power, water, etc.

f. IR Climate.

g. Strength and weaknesses of other players in the industry.

h. Government policies affecting tyre industry.

i. Potential competition from global players and their strategies, commitment towards Indian market.

4. Financial Projections – DCF Approach

(Rs. in crore)

	2001	2002	2003	2004	2005	2006
• Net Sales	55.61	58.58	79.66	107.32	120.07	122.24
• Expenses						
– Raw Material	24.94	26.25	33.80	44.10	48.94	48.94
– Consumables	0.62	0.67	0.89	1.17	1.29	1.30
– Power	1.10	1.16	1.59	2.15	2.40	2.46
– Employees related costs	2.90	3.04	3.96	4.42	4.98	5.57
– Administration expenditure	1.16	1.25	1.66	1.82	1.94	2.07
– Selling expenditure	3.06	3.22	4.38	5.90	6.60	6.72
– Total expenditure	33.78	35.59	46.28	59.56	66.15	67.06

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(Rs. in crore)

	2001	2002	2003	2004	2005	2006
• EBDIT	21.83	22.99	33.38	47.76	53.92	55.18
• Depreciation	0.50	0.69	2.07	2.09	2.12	2.14
• EBIT	21.33	22.30	31.31	45.67	51.80	53.04
• NOPLAT	16.00	16.73	23.48	34.25	38.85	39.78
• Gross Cash Flow	16.50	17.42	25.55	36.34	40.97	41.92
• Gross Investments	2.02	4.78	17.36	4.50	2.01	0.37
• Free Cash Flow	14.48	12.64	8.19	31.84	38.96	41.55

I. Computation of Gross Investments

	2001	2002	2003	2004	2005	2006
• Current Assets	2.02	0.53	3.47	4.50	2.01	0.37
• Fixed Assets	—	4.25	13.89	—	—	—
	2.02	4.78	17.36	4.50	2.01	0.37

II. Computation of Cost of Capital

Market value of equity = 1.192 x 21 = Rs.25.03 crore

Equity = 3.05 + 8.87

$$\therefore n = \frac{3.05 + 8.87}{10} = 1.192$$

Market value of debt = 6.28 + 10.70 = 16.98 = Rs.42.01crore

Cost of equity $= R_f + \beta (R_m - R_f)$

= 0.115 + 0.8(0.09) = 18.7%

Cost of debt = 18 x 0.75 = 13.5%

$$\therefore \text{WACC} = 18.7 \times \frac{25.02}{42.01} + 13.5 \times \frac{16.98}{42.01} = 16.59\%.$$

III. Computation of Continuing Value

$$CV_6 = \frac{41.56(1.15)}{0.1659 - 0.15} = \frac{47.794}{0.0159} = \text{Rs.3,005.9 crore.}$$

IV. Value of Eagle Tyres

$$= \frac{14.48}{(1.1659)} + \frac{12.64}{(1.1659)^2} + \frac{8.19}{(1.1659)^3} + \frac{31.84}{(1.1659)^4}$$

$$+ \frac{38.96}{(1.1659)^5} + \frac{41.55}{(1.1659)^6} + \frac{3005.9}{(1.1659)^6} - 16.98 = \text{Rs.1,937.8 crore.}$$

5. Equivalence of the Two Formulae for Estimating Continuing Value

The two formulae for determining the continuing value are as follows:

Free cash flow perpetuity formula : $\frac{FCA}{k - g}$ (1)

Value driver formula : $\frac{NOPLAT(1 - g/r)}{k - g}$ (2)

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As the denominators are identical, to establish the equivalence of the two formulae, we have to prove that

$$FCF = NOPLAT\ (1 - g/r) \quad (3)$$

Where,

FCF	=	Free Cash Flow
NOPLAT	=	Net Operating Profits Less Adjusted Taxes
g	=	growth rate in NOPLAT
r	=	rate of return on new capital invested.

Let us start with the following definition of Free Cash Flow (FCF):

$$FCF = NOPLAT - INV \quad (4)$$

Where,

INV = net increase in invested capital over and above the replacement capital.

If the return on existing capital employed remains constant, a firm's NOPLAT in year t is equal to its NOPLAT in year t–1 plus the return earned on INV in year t–1.

$$NOPLAT_t = NOPLAT_{t-1} + r \times INV_{t-1} \quad (5)$$

Rearranging Eq. (5) gives:

$$NOPLAT_t - NOPLAT_{t-1} = r \times INV_{t-1} \quad (6)$$

Dividing both sides of Eq. (6) by $NOPLAT_{t-1}$ gives:

$$\frac{NOPLAT_t - NOPLAT_{t-1}}{NOPLAT_{t-1}} = \frac{r \times INV_{t-1}}{NOPLAT_{t-1}} \quad (7)$$

As the left hand side of Eq. (7) represents the growth (g) in NOPLAT, we get:

$$g = r \times \frac{INV}{NOPLAT} \quad (8)$$

This gives:

$$INV = NOPLAT \times g/r \quad (9)$$

$$FCF = NOPLAT - (NOPLAT \times g/r) \quad (10)$$

$$FCF = NOPLAT\ (1 - g/r) \quad (11)$$

The ratio g/r may be referred to as the net investment rate. It reflects the ratio of the net new investment to NOPLAT.

6. The adjusted book value approach to valuation involves determining the fair market value of the assets and liabilities of the firm as a going concern. It may be distinguished from other approaches relying on the balance sheet. For example, it is different from the conventional book values. Likewise, it is distinct from the market price to book value method, an approach that depends on the market value of securities.

Value of Assets

The first step in the adjusted book value approach is to value the assets of the firm. The key considerations in valuing various assets are discussed below:

Cash: Cash is cash. Hence, there is no problem in valuing it. Indeed, it is gratifying to have an asset which is so simple to value.

Debtors: Generally, debtors are valued at their face value. If the quality of debtors is doubtful, prudence calls for making an allowance for likely bad debts.

Inventories: Inventories may be classified into three categories: raw materials, work-in-process, and finished goods. Raw materials may be valued at their most recent cost of acquisition. Work-in-process may be approached from the cost point of view (cost of raw materials plus the cost of processing) or from the selling price point of view (selling price of the final product less expenses to be incurred in translating the work-in-process into

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sales). Finished goods inventory is generally appraised by determining the sale price realizable in the ordinary course of business less expenses to be incurred in packaging, holding, transporting, selling, and collection of receivables.

Other Current Assets: Other current assets are deposits, pre-paid expenses, and accruals at their book value.

Fixed Tangible Assets: Fixed tangible assets consist mainly of land, buildings and civil works, and plant and machinery. Land is valued as if it is vacant and available for sale. Building and civil works may be valued at replacement cost less physical depreciation and deterioration. Plant and machinery, too, is valued at replacement cost less physical depreciation and deterioration. As an alternative, the value of plant and machinery may be appraised at the market price of similar (used) assets plus the cost of transportation and installation.

Non-operating Assets: Assets not required for meeting the operating requirements of the business are referred to as non-operating assets. The more commonly found non-operating assets are financial securities, excess land, and infrequently used buildings. These assets are valued at their fair market value.

Intangible assets pose a problem. As they cannot be ordinarily disassociated from the business and sold separately, the market approach is not very helpful in valuing them. Therefore, one may use the cost approach or the income approach.

Liabilities

Valuing liabilities is relatively easier. The key considerations in assessing the broad categories of liabilities are discussed below:

Long-term Debt: Long-term debt, consisting of term loans and debentures, may be valued with the help of standard bond valuation model. This calls for computing the present value of the principal and interest payments, using a suitable discount rate.

Current Liabilities and Provisions: Broadly defined, current liabilities and provisions consist of short-term borrowings from banks and other source; amounts due to the suppliers of goods and services bought on credit; advance payments received; accrued expenses; provisions for taxes, dividends, gratuity, pension, etc. Current liabilities and provisions are typically valued at face value.

Ownership Value

The value of total ownership is simply the difference between the value of assets and the value of liabilities. Ordinarily, there is no need to add premium for control because assets and liabilities are valued in economic terms. On the contrary, it may be appropriate to apply a discount for the marketability factor. Why? While it may be easier to sell an entire business, it may not be easy to locate informed and willing buyers on a timely basis. Hence, a discount may have to be offered.

How should a minority interest in a closely-held business be assessed? For valuing such an interest a higher discount factor should be applied. The discount factor must reflect the concern for marketability as well as the weak position of minority interest.

Case Study 4

1. Friedman Corporation is in the electrical business whereas, Maryman is the manufacturer of biscuits. By and large, there is no link between the industries. Hence, the merger would be a conglomerate merger.

Drucker's Rules for a successful Merger:

i. The acquirer should contribute in some way to the acquired company.

ii. A common core of unity is required.

iii. The acquirer should respect the business of the acquired company.

iv. The acquiring company should provide top management to the acquired company within a year of the merger.

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v. Promotions should be assured to the management of both the companies within the first year.

However, the Rules can be simplified as:

a. The merging companies must have activities that should be related in some way.

b. Well-structured incentives and rewards must be held out to the management of both firms to help make the merger work. Moreover, the acquiring firm should be prepared to cover the departure of the key management of acquired companies.

The first rule is not accomplished in case of conglomerate merger. However, the merger can still be successful if proper measures like proper understanding about the businesses, respect for the management of the other firm, similarity of the working culture, etc., exists between the two merging companies. For example, Nusli Wadia of Bombay Dyeing acquired the Britannia Industries Limited in October '95.

As Friedman Corporation is into the electrical business, it would have use for copper. Hence, its merger with Ramico would be a vertical one (backward integration). After this merger, Friedman can meet its copper requirements from Ramico, thereby saving resources like time and effort. Moreover, the cost of production of Ramico Industries is also lesser than the other steel companies in the market.

2. Computation of the Market Price per Share

		Friedman	Maryman	Ramico
1.	Total Assets (millions)	216	80	67
2.	Earning rate, $r/(1 - T_c)$	0.08	0.26	0.30
3.	Net operating income (1) x (2) (Rs. millions)	17.28	20.8	20.1
4.	Interest on debt	4.68	3.90	2.47
5.	Profit before tax (millions)	12.6	16.9	17.63
6.	Taxes at 50% (millions)	6.3	8.45	8.82
7.	Net income (millions)	6.3	8.45	8.82
8.	Number of shares of common stock (million)	6	2	2
9.	Earnings per share of common stock, (7)/(8)	1.05	4.225	4.41
10.	Price/earnings ratio (given)	6.8	13.70	10.66
11.	Market price per share, (9) x (10)	7.14	57.88	47.01
12.	Total market value of equity, (11) x (8) (millions)	42.84	115.76	94.02

3. Effects of Merger on EPS

1.	Number of new shares (million) [a]	13.16
2.	Existing shares (millions)	6
3.	Total new shares (millions)	19.16
4.	Earnings after taxes (millions of dollars)	8.82
5.	Add: Friedman's after tax earnings (millions of dollars)	6.30
6.	Total new earnings (millions of dollars)	15.12
7.	New earnings per share, (6)/(3), Rs.	0.79
8.	Less: Friedman's old earnings per share	1.05
9.	Net Effect	(0.26)

a Each share of Ramico is 13.16 times [(47.01/7.14) x 2] that of Friedman.

Hence, the net effect on EPS due to the merger with Ramico would be a reduction of Rs.0.26 million.

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4. For a comparative analysis of the alternatives, we first need to calculate the beta of the merged company under both the alternatives.

Lets take Friedman as F, Maryman as M and Ramico as R for our convenience.

$$\beta_{FM} = \beta_F\left[\frac{V_E F}{V_E F + V_E M}\right] + \beta_M\left[\frac{V_E M}{V_E F + V_E M}\right]$$

where,

β_{FM} = Beta of the combined firms F and M

V_E = Value of equity

β_{FM} = 1.5[42.84/(42.84 + 115.76)] + 1.6 [115.76/(42.84 + 115.76)]

= 0.40 + 1.17 = 1.57

k_s (FM) = $R_f + [E(R_M) – R_f]\ \beta_{FM}$

= 8% + [13% – 8%] 1.64 = 15.85%

β_{FR} = 1.5 [42.84/(42.84 + 94.02)] + 1.7[94.02/(42.84 + 94.02)]

= 0.47 + 1.17 = 1.64

ks(FR) = $R_f + [E(R_M) – R_f]\ \beta_{FR}$

= 8% + [13% – 8%] 1.64 =16.2%.

The weighted average cost of capital of the combined firms:

$$\text{WACC} = k = k_s\left(\frac{S}{V}\right) + k_b(1-T_c)\left(\frac{B}{V}\right)$$

k(FM) = 0.1585 (100.75/166.75) + 0.065 (66/166.75)

= 12% (approx)

k(FR) = 0.162 (89.82/144.82) + 0.065 (55/144.82)

= 12.5% (approx)

Value of the combined firm (FM):

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

X_0 = operating net income

$$V_{FM} = 23(1-0.5)(1-0.8)\sum_{t=1}^{10}\frac{(1+0.15)^t}{(1+0.12)^t} + \frac{23(1-0.5)(1+0.15)^{10+1}}{0.12(1+0.12)^{10}}$$

$= 2.3 \sum_{t=1}^{10} (1.027)t\ +\ [11.5/0.12\ x\ (1.027)10\ x\ (1.15)]$

= 2.3(1.027) FVIFA $_{(2.7\%,\ 10yrs.)}$ + 95.84 FVIF $_{(2.7\%,\ 10yrs.)}$ (1.15)

= 26.7 + 143.85

= Rs.170.55 million

$$V_{FR} = 19(1-0.5)(1-0.8)\sum_{t=1}^{10}\frac{(1+0.14)^t}{(1+0.125)^t} + \frac{19(1-0.5)(1+0.14)^{10+1}}{0.125(1+0.125)^{10}}$$

$= 1.9 \sum_{t=1}^{10} (1.014)\ t + (9.5/0.125)\ (1.014)10(1.14)$

= 1.9 (1.014) FVIFA $_{(1.4\%,\ 10yrs.)}$ + 76 FVIF $_{(1.4\%,\ 10yrs.)}$(1.14) = 20.52 + 99.56

= Rs. 120.08 million.

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Comparison of Two Mergers

(Rs. in million)

	Friedman/ Maryman	Friedman/ Ramico
Postmerger value, V	170.55	120.08
Less: Amount of debt, B	66	55
Value of equity, S	104.55	65.08
Less: Friedman's premerger market value	42.84	42.84
Gain in equity value	61.71	22.24
Cost if acquired at market price	115.76	94.02
Gain in value (loss)	(54.05)	(71.78)

From the above table, it can be seen that the merger with Maryman gives a net loss of Rs.54.05 million, whereas, the merger with Ramico gives a loss of Rs.71.78 million to Friedman.

5. The acquiring firm, Friedman Corporation has to consider several firms as alternative merger candidates. The historical data may be used as inputs for forecasting or estimating prospective returns and risks from the alternative merger combinations that need to be estimated prior to a decision. The proper forecast of the risks and returns associated with the combined entities is important; hence parameters taken for the forecast should be taken after thorough study. For instance, the estimates of net operating earnings and their potential growth may or may not reflect their synergy between the combining firms depending on the nature and potential of the combined operations. In-depth studies of the relevant product markets and the results of the combining organizations of the two firms are required. However, resulting forecasts may be subjected to prediction errors, which may sometimes be of substantial nature.

Case Study 5

1. Taking the Leveraged BuyOut (LBO) way has become an increasingly popular way of going private. LBO may be defined as an acquisition, financed largely by borrowing, of all the stock, or assets, of a hitherto public company by a small group of investors. In a LBO, debt financing typically represents 50 percent or more of the purchase price.

Elements of a LBO Operation

The first stage of the operation is involved in raising the required cash for the buyouts and devising a management incentive system. In the general context, the investor group funds 10 percent of the cash. The top managers of the company as well as the buyout specialists head this group. This is the equity base of the new firm, the remainder of which is provided by the outside investors. The managers also receive compensations in the form of stock options or warrants. Cash is also raised by borrowing against the company's assets in secured bank acquisition loans, issuing senior and junior subordinated debt.

In the second stage, the organizing sponsor group buys all the outstanding shares of the company and takes it private. The group may even purchase all the assets of the company and form a new privately held corporation.

The third stage involves the new corporation cutting down the operating costs and changing the marketing strategies to increase the profits and cash flows. Steps taken in this stage include consolidating or reorganizing the production facilities, improving the inventory control and accounts receivables management, changing the product quality and product mix. It may also lay-off some employees to reduce the costs.

The fourth stage is when the investor group has to decide if the company is to be taken public if it emerges strong and the goals have been achieved. Such a procedure is referred to as a reverse LBO. It is effected through public equity offering, better known as Secondary Initial Public Offering (SIPO). Such a conversion creates liquidity for the existing stockholders.

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2. The Evidences for the Large Gains in Case of a LBO

Taxes: A new company can operate without paying any interests for as long as five-six years. The other tax related benefits include interest savings due to high leverage. Moreover, the asset step-ups can also provide higher asset values for depreciation expenses.

Management Incentives: The management is provided with ownership stake in the new company as an incentive to perform better.

Wealth Transfer Effects: The premiums in the LBO may represent the wealth transfers to shareholders from other stakeholders like bondholders, preferred shareholders, employees, and the government.

Asymmetric Information and Underpricing: Large premiums paid by the buy-out investors in case of LBOs reflect more information with the managers or investors than the public shareholders.

3. Computation of FCFE and FCFF

(Amount in Rs.)

Years	1	2	3	4	5	Terminal value
Revenues	40,00,000	46,00,000	52,90,000	60,83,500	69,96,025	76,95,628
Less: Operating expenses	31,00,000	35,65,000	40,99,750	47,14,713	54,21,919	59,64,111
Less: Depreciation	3,00,000	3,45,000	3,96,750	4,56,263	5,24,702	5,77,172
EBIT	6,00,000	6,90,000	7,93,500	9,12,524	10,49,404	11,54,345
Less: Interest	6,50,000	5,90,000	5,30,000	4,70,000	4,10,000	3,50,000
Pretax Income	(50,000)	1,00,000	2,63,500	4,42,524	6,39,404	8,04,345
Tax	--	40,000	1,05,400	1,77,010	2,55,762	3,21,738
Net income	(50,000)	60,000	1,58,100	2,65,514	3,83,642	4,82,607
Add: Depreciation	3,00,000	3,45,000	3,96,750	4,56,263	5,24,702	5,77,172
Less: Capital expenditure	3,50,000	4,02,500	4,62,875	5,32,306	6,12,152	6,73,367
Less: Changes in working capital	2,00,000	2,30,000	2,64,500	3,04,175	3,49,801	3,84,781
Less: Principal repaid	6,00,000	6,00,000	6,00,000	6,00,000	6,00,000	0
= FCFE	(9,00,000)	(8,27,500)	(7,72,525)	(7,14,704)	(6,53,609)	1,631
Add: Interest x (1-t)	3,90,000	3,54,000	3,18,000	2,82,000	2,46,000	2,10,000
Add: Principal repaid	6,00,000	6,00,000	6,00,000	6,00,000	6,00,000	0
= FCFF	90,000	1,26,500	1,45,475	1,67,296	1,92,391	2,11,631

4. Computation of WACC

(Amount in Rs.)

Years	1	2	3	4	5	Terminal
Equity	19,50,000	20,10,000	21,68,100	24,33,614	28,17,256	32,99,863
Debt	59,00,000	53,00,000	47,00,000	41,00,000	35,00,000	29,00,000
Debt/equity	3.03	2.64	2.17	1.68	1.24	0.88
Beta	3.00	2.77	2.49	2.20	1.94	1.72
Cost of equity	25.50%	24.24%	22.70%	21.11%	19.68%	18.47%
Weighted Average Cost of Capital (WACC)	15.75%	15.12%	14.35%	13.56%	12.84%	12.24%

Working notes to the calculations of Equity, β and cost of equity:

Equity at the end of year 1 = net income + equity at the end of year 0.

a. β_L in year 2: $\beta_{L2} - \beta_{L1}$

$= (1 - t) \times [(D_2/E_2) - (D_1/E_1)]$ and

$\beta_{L2} = (1 - t) \times [(D_2/E_2) - (D_1/E_1)] + \beta_{L1}$

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b. Cost of equity in year 2:

$COE_2 - COE_1 = (\beta_{L2} - \beta_{L1}) \times 5.5$ and

$COE_2 = (\beta_{L2} - \beta_{L1}) \times 5.5 + COE_1$

c. The debt/equity ratio is taken 1:1 while calculating the WACC.

5. Calculation of Terminal Value

a. Terminal value of equity = 1,631/(0.1224 – 0.10)

= Rs.72,812.5

= Rs.72,813.

b. Terminal value of firm = Terminal value of Equity + Outstanding debt

= 72,813 + 29,00,000

= Rs.29,72,813

Calculation of Present Value

PV of deal to equity investors

= – 9,00,000/(1.2550) – 8,27,500/(1.2550 x 1.2424) – 7,72,525/(1.2550 x 1.2424 x 1.227) – 7,14,704/(1.2550 x 1.2424 x 1.2270 x 1.2111) + (72,813–6,53,609)/(1.2550 x 1.2424 x 1.2270 x 1.2111 x 1.1968)

= – 7,17,131 – 5,30,717 – 4,03,797 – 3,08,458 – 2,09,447 = Rs. (21,69,550)

PV to equity investors < Rs.20,00,000 (equity investment in the LBO).

PV of deal to Firm:

90,000/(1.1575) + 1,26,500/(1.1575 x 1.1512) + 1,45,475/(1.1575 x 1.1512 x 1.1435) + 1,67,296/(1.1575 x 1.1512 x 1.1435 x 1.1356) + (1,92,391 + 29,72,813)/(1.1575 x 1.1512 x 1.1435 x 1.1356 x 1.1284)

= 77,754 + 94,933 + 95,473 + 96,683 + 16,21,083 = Rs.19,85,926

Rs.19,85,926 < Rs.85,00,000 (total cost of the LBO including both debt and equity).

The proposed LBO does not make sense because neither equity investors nor lenders can recover their original investment or loans plus their required rates of return.

6. Factors critical to the success of a LBO include knowing what to buy, not to overpay and to possess the ability to improve operating performance.

Knowing what to buy: Firms having substantial tangible assets, unused borrowing capacity, predictable positive cash flows and assets not critical to the continuing operations of the business, besides being highly competent and with highly motivated management, form the cream of the candidates to be considered for the LBO.

Besides having cash balances, the target company should also have excess working capital requirements, a low debt-to-total capital ratio in comparison to the industry average and a record of consistent earnings and cash flows growth.

The manufacturing, retailing, textiles, food processing and the soft drinks industries are characterized by large tangible book values, modest growth prospects and relatively stable cash flows. Moreover, such industries are not subjected to rapid changes. Hence, they can be considered as safe for LBOs.

Not to Overpay: The acquiring company should never overpay. It is more important in case of an LBO. The forecasted cash flows are prone to errors. Hence, even with a slightly lower than the projected operating earnings, the company's ability to entertain the interests and principal would be jeopardized.

Improving Operating Performance: The newly formed company should pay attention to maximizing operating cash flows and reducing expenses. It can also negotiate employee wage and benefit concessions in exchange for a profit sharing or stock ownership plan. Outsourcing of services may also result in savings. Other cost cutting tactics like shifting the corporate headquarters to a less expensive locality and marginally profitable customer accounts should be aggressively pruned.

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Part V: Caselets (Questions)

Read the caselets carefully and answer the question(s) preceding each caselet.

Caselet 1

1. What do you mean by 'value creation'?

2. How can managers create value for the shareholders of the company?

In life, most of us merge families through marriage and acquire assets through purchases. We might have spent many days, weeks or months planning to ensure that the decisions would produce sufficient values for our lives. Yet we may discover in the future that not all mergers are successful and not all acquired assets demonstrate their value. This is quite identical to the situation of business Mergers and Acquisitions.

In a simple language, a merger is a combination of two or more entities from which one corporation continues to exist. An example of a merger is DaimlerChrysler – a merger between Daimler-Benz and Chrysler. An acquisition, or takeover, involves a purchase of an entity, which continues to function in future, but it does so under the control of the acquirer. Compaq's acquiring of Digital Equipment Corporation is an excellent example of acquisition. Mergers tend to occur on friendly terms while acquisitions are based on either friendly or hostile situations. A merger or acquisition may result in a horizontal integration or vertical integration and may comprise firms in a related industry or unrelated industries. All M&As aim at creating "value" for the shareholders.

Caselet 2

3. Against the given backdrop, briefly describe the various defense strategies that are available with corporates to protect themselves from hostile takeovers.

The deregulation and globalization of the economy has forced the corporates to face cut-throat competition from domestic and foreign entities. This has resulted in an immense restructuring by the corporates to enable them to take up emerging challenges. Most of the companies are restructuring their business portfolios by consolidating areas of their core competencies and divesting their other businesses. In addition, the notification of the Takeover Code by SEBI has opened a large market for corporate control.

All the above stated developments have resulted in an exponential growth of business for investment bankers. One among them is the valuation of firms for the purpose of acquisition/sale. The other services rendered by investment bankers include acquisition search, managing the tender offers for takeovers, identification of buyer(s) for divestitures, negotiations, etc. Arrangement of acquisition finance will open up new business opportunities to develop a franchise in high yield securities. Management of privatization issues is also an emerging business opportunity. With an increasing degree of hostile takeovers in the recent past, designing a takeover 'defense strategy' (both pre-emptive and reactive) has turned out to be another important service offered by investment bankers.

Caselet 3

4. What do you mean by 'joint venture'? Highlight the various characteristics of a joint venture.

5. What are the various reasons that encouraged Sony to go for a joint venture with Ericsson?

Some time back LM Ericsson and Sony Corporation announced to form their 50:50 joint venture company, Sony Ericsson Mobile Communications in India. The new firm will be marketing/promoting the existing range of Ericsson and Sony mobile handsets under a common brand name.

Globally, Sony Ericsson had announced the beginning of its joint operations on October, 2001. Sony and Ericsson had signed an agreement to set-up Sony Ericsson (a 50:50 joint venture) on August, 2001. On September of the same year, the two companies announced that their respective boards have permitted the mobile phone joint venture.

Since Sony has no direct presence in India, the new entity will primarily be managed by the team, which was shouldering the task of marketing Ericsson's mobile phones in the country.

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Sony saw good opportunity in joining the venture, as Ericsson will come forward with its communication infrastructure, the communication networks, wireless technology and R&D.

Following the roll out of Sony Ericsson in India, the company also announced the launch of T68, the first full-screen display GPRS mobile phone in the country. This will be followed by the launch of two new mobile phones – the T65 and T66, over the coming few months under the Ericsson brand. However, the first Sony Ericsson branded handset will be introduced in the country in the second quarter of 2002.

Caselet 4

6. Against the given backdrop, briefly describe how a company can retain its key managers during the time of its merger with another company.

Mergers among corporates first produce headlines and then headaches if not tackled speedily and tactfully. There are around 8500 companies listed on all of 23 SEs in India. However, only 500 odd companies account for almost ninety five percent of total market capitalization and are squeezing the smaller companies out of business in most industries facing oversupply. Thus, the run has already started with most multinational's subsidiaries looking out for gobbling the smaller players in their identical line of businesses.

Human resource is important during this stage and can really jeopardize the new company's competitive edge. During mergers and acquisitions, the new company would derive the benefits of scale: it would unite plants and staff with more products to sell through its marketing channel. Thus, most companies will have two managers for every available position depending upon the number of layers between the worker and the management. However, to get the new company going, the first hurdle is to select the top layer of management. During this stage, market rumours go ripe and strong and could sometimes become facts if they are not quickly removed. As the stock price falls and talented people pay attention to exit, a decision needs to be taken on whom to keep and whom to retrench.

Caselet 5

7. On what basis do companies grant ESOPs to various employees?

8. Can ESOPs be used by a closely held company as a tool for enhancing employee performance?

Many companies across the world consider ESOPs as incentives for employees to perform well in the future. Since the market is the eventual arbiter of performance, the price it puts on the company's stock will help find out the value of employees' holdings. But should the offer be an equal number of shares to each employee or should it vary based on their past and potential performances?

That's where selecting the right parameters of performance comes in. As per the standards fixed by US companies, the main option is between absolute and relative indicators – progress in sales, profits, or share-prices, either in absolute terms or relative to those of rivals. Added to that, specific targets could be fixed for different employees working in different positions and capacities.

To cite an example, ICICI took into account the performance against some pre-fixed targets, the management level, the leadership quality, and the technical knowledge of every individual before picking the 100-and-odd out of the 1,200 people that the company recruits. Inability to meet these targets at any point will rule a beneficiary out of the ESOP. The central idea is to make it a forward-looking tool. By integrating personal goals with the organization, it should make key people think and work better for the future.

Caselet 6

9. If the trust buys shares from the market, can the company give loan to the trust to buy its own shares?

10. How are the profits from ESOP taxed?

11. Are ESOP shares eligible for bonus and right issue later on?

Nowadays, getting employees stick to companies is becoming a hard task for the employers of Infotech, Pharmaceutical and other knowledge-based industries. Many Infotech companies are using ESOP concepts to keep the employees' turnover low. Designing and implementing an ESOP

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plan is not an easy job. While designing the ESOP plan, companies have to consider various factors and strike a balance between various interested groups like employees and shareholders. In addition, effect of tax on the ESOP plan should also be carefully planned. The following discussion will explain how software giants are implementing ESOPs as employee benefit tools.

Around seven years back in 1994, the Indian software giant, Infosys Technologies Limited, was the first company to implement its ESOP plan. The company established Employees Welfare Trust and transferred 7,50,000 warrants to the trust for the benefit of eligible employees. The company extended loan to the trust so as to purchase warrants. Afterward, the trust transferred the warrants at Rs.1 each and each warrant permitted holders to acquire a single share of the company at Rs.100.

Four years down the line in 1998, the company launched its second ESOP plan. Under this plan, it offered options, which were exercisable for equity shares, represented by AD Rs.8,00,000 shares were reserved under the plan to be issued. The Government fixed a higher ceiling of US$ 50 within which shares had to be issued. Hence, the number of equity shares keeps on changing with the changes in the price of shares in the stock market.

Caselet 7

12. Against the given backdrop, briefly describe the various methods that are being used by professionals for valuing a business.

There are many reasons that necessitate us to know the value of our business – a merger/outright sale, tax or loan, or real estate planning. Whatever may be the reason, trying to come out with a suitable figure can be a key challenge.

There are various difficult-to-estimate intangibles that are a factor in the value of a business. It is not just a process of summing up the numbers from various reports. Business valuation has been known to be an art, rather than a science. Estimates of a business' value by various experts can vary by as much as 30 percent. Not only is there no uniformity in methods used, but there is also no consistency in giving names to the methods. Each method has a wide variety of names. The most pertinent factor in any valuation is that the method used should be appropriate to our kind of business, satisfying all our valuation needs and producing a valid and supportable figure.

Such wide variety of methods causes confusion in picking up the right one. That is why we often take the help of professionals. There are plenty of advantages and disadvantages of each method – and there always seem to be a new valuation method on the anvil.

Caselet 8

13. Describe the meaning of the terms Dawn Raid, Poison Pill and Saturday Night Special used in the paragraph below.

For some investors, terms like 'Poison Pill', 'Dawn Raid' and 'Saturday Night Special' can be scary. Though they might resemble the terms used in the James Bond comics, there is nothing entertaining about them from an investor's point of view. Holding stocks in a company means the investors are part owners; with mergers and acquisitions taking place every month/week, it is pertinent to know what these terms mean for investors' holdings.

Mergers, acquisitions and takeovers have been part of the corporate game for centuries. In today's fast-changing business environment, managers often face decisions regarding acquisitions or mergers. The job of a good management is to maximize shareholder value. In most cases, mergers and acquisitions can enable a corporate to develop a competitive edge and finally enhance shareholder value. There are several ways in which two or more companies can combine their efforts. They can be partners in a project, mutually agree to join forces and merge, or one company can totally acquire another company.

Caselet 9

14. In the given context, briefly describe how M&As are being financed in India?

Financing of the Indian M&A activities need a new direction. It is high time the RBI realized that absence of bank finance for corporate takeovers badly affects the growth of Indian M&A activity. The numerous financing constraints that continue to plague the Indian M&A scenario should become a matter of great concern for the RBI.

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The major issue is that the RBI continues to have obsolete regulations that do not permit banks to finance corporate acquisitions. The hazy logic behind these regulations: banks should keep themselves away from financing speculative activities. But M&As are not speculative activities. Says Sunil Gulati (head-investment banking group), Bank of America, "An acquisition of a strategic controlling stake in a company is an economic activity that creates value". That is why bank financing is a must for M&As.

Caselet 10

15. How is the 'spin-off' process different from the 'equity carve out' process? How will the parent company's balance sheet be affected by an equity carve out deal?

Over the years, restructuring movement has greatly reconfigured the corporate world. In the search for leaner, more focused organizations, equity carve outs and spin-offs have become popular with corporates that wish to deconglomerate and leverage on their core business strengths. Usually, the business being spun off is not the crown jewel of the parent organization. But, with the average spin-offs growing in size in the recent past, the business media has begun to look at them to create headlines. No wonder, investors are also showing keen interest.

Under a spin-off process, the parent organization divests a business division to shareholders by handing out the subsidiary's common stock as a dividend – usually a tax-free distribution to both investors and the parent. In a pure spin-off arrangement, a parent firm's shareholders get a pro rata distribution of a wholly owned subsidiary's newly traded stock.

To cite an example, when Tenneco (an American company) spun off Newport News Shipbuilding, Tenneco shareholders were offered 1 share of Newport News Shipbuilding for every 5 of Tenneco shares they held. Once the share distribution process is over, the ownership structure of the spin-off is equal to the parent's, and the parent no longer manages/controls the subsidiary.

Caselet 11

16. What do you mean by hostile takeover and how is it different from a friendly takeover?

17. Describe the various takeover defenses such as the staggered board and poison pills mentioned in the paragraph below.

Weyerhaeuser Co. kicked off a hostile takeover move of Willamette Industries, Inc. through a US $48 per share tender offer; Weyerhaeuser bid values at US $5.4 bn for Willamette. Willamette had "Just Say No" attitude towards the takeover. Staggered terms for board members existed with 1/3 being up for re-election this year, as well as a shareholder rights plan – 'poison pill'. In addition, the company delayed its annual meeting fuelling shareholder concerns that the firm might not be performing in good interest of the shareholders.

Outstanding shares of 51% from the market have been tendered. It is understood that this move, however, has been to enthuse Willamette to put a higher offer as shareholders think the price is extremely low. In reply, the board of Willamette sent a letter to Weyerhauser indicating that they would discuss a 'legitimate' proposal rather than the low-ball offer. Weyerhauser responded that it would offer a higher price if Willamette could demonstrate more value.

Caselet 12

18. Discuss the various benefits and limitations of vertical integration.

A corporate attempts to gain control of its inputs (backward integration) or outputs (forward integration), or both. The soft drink major, 7-Up, used to possess the lemon tree orchards that produced the lemon extract for the drink (backward integration). Similarly for a period, the Holiday Inn owned a furniture house that made the furniture for the new rooms the corporation (Holiday Inn) constructed every year (backward integration). A goods manufacturer can own the trucking firm that would transport its goods from the factory to ports/wholesalers/retailers (forward integration). A FMCG company could own a chain of retail stores through which it can sell its products (forward integration). Forward integration is also known as downstream. This refers to the direction of flow the integration takes in the marketing channel, with the end customer as the reference point.

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Caselet 13

19. How would you differentiate between 'M&A specialists' and 'business brokers'?

20. "Merger is not without complexities and downsides". Discuss.

A merger is not a process that corporates undertake coolly; it is not without complexities and downsides. It covers preparation and initial negotiations, due diligence, the purchase and sale and portfolio transfers, all involving financial, legal and human implications.

Before going for merger moves, the corporates may want to consider the pros and cons of a merger. Usually, the hunt for the accurate partner begins once the decision is made to buy or sell. For the seller, a valuation report including a past record of the business, an explanation of how the business functions, the suppliers, the facilities, marketing practices, competition, personnel, owners, insurance, and legal matters, and audited financial statements of last 3-5 yrs must also be made ready. Most companies take the help of 'M&A intermediaries' to speed up and smoothen the process. There are two types of intermediaries – M&A specialists and business brokers.

Caselet 14

21. What do you mean by internal development/internal growth? What decides for a company to go for internal growth strategies or external growth strategies (mergers and acquisitions)?

Internal development and mergers are mutually supportive activities. Growing companies adopt various forms of M&As and other restructuring practices depending on the existing opportunities and limitations. The characteristics and competitive structure of an industry will affect the strategies employed. The factors and situations favoring M&As in part relate to industry characteristics. In an industry with excess capacity, horizontal mergers can be used to close down high-cost firms to decrease industry supply and to boost efficiency in the balance firms. In addition, a number of industries, earlier operating on small-scale operations, have been rolled up into bigger units. The larger units have been able to achieve economies of scale not achieved by smaller individual units.

A few more advantages of M&As or external growth may also be highlighted. An acquisition helps the acquirer to acquire a firm already in place with a historical track record. Some complexities are still possible, but can be eased off to some extent by appropriate due diligence. An acquisition usually involves paying a premium, but the cost of acquiring a company may be estimated in advance.

An acquisition may also represent acquiring a segment divested from another firm. The logic is that the segment can be managed in a better way when added to the activities of the buying firm. Another important motive for M&As is to increase the strength of the acquiring firm. For example, the exceptional growth of Cisco Systems was achieved by acquisition of companies with the technology and talent to expand capabilities.

Caselet 15

22. What do you mean by "purchase method" of asset valuation?

23. How would the Reliance group be benefited by this merger move?

On March 3, 2002, the Boards of Reliance Industries (RIL) and Reliance Petroleum (RPL) approved the merger of RPL with RIL, with the swap ratio fixed at 1 IRL share for every 11 RPL share (1:11). The merger will take effect from April 1, 2002 and will result in 32% increase in RIL's equity (from Rs.1,053 crore to Rs.1,396 crore).

RPL's assets have been valued at Rs.21,000 crore under "purchase method" of valuation, which will be financed out of creation of equity with the current market value of Rs.11,000 crore. This represents a direct benefit of Rs.10,000 crore to the shareholders. Under the proposed conditions of the merger, RIL's 28% holding in RPL's equity will be canceled, and promoters' direct holding in RIL will come down from 44% to 34%.

Once the merger takes place, RIL's sales figure will cross Rs.58,000 crore. It will be the only Indian private sector company in the Fortune 500 list and will be amongst the top 225 world-class companies in terms of net profit, among the top 300 companies in terms on net worth, among the top 425 companies in terms of assets and among the top 500 companies in terms of sales.

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Part V: Caselets (Answers)

Caselet 1

1. Mc Taggart, Kontes and Mankins define 'value creation' as managing the performance of individual business firms with respect to the cash flows generated or rates of return produced over a period of time. The term value creation refers to improvements of return on investment of owners by increasing the cash inflows and reducing the risk.

The value creation process introduced by Pike and Neale in the year 1996 involves the following:

- Review the corporate financial structure from the shareholders' point of view. Consider whether changes in capital structure and business mix or ownership would enhance value.
- Increase efficiency and bring down the after-tax cost of capital through judicious use of borrowings.
- Improve operating cash flows through focusing on health, creating investment opportunities (having positive net present value), profit improvement and overhead reduction program and divestiture.
- Adopt financially driven value creation using various new financing instruments and arrangement i.e. financial engineering.

In any business, the value created is examined by comparing the ROA to the Cost of Capital (K) of a company. Value is created when a business unit or a company can earn ROA that exceeds its cost of capital (ROA > K); when ROA does not exceed Cost of Capital (ROA < K), value is destroyed.

2. Managers can create significant value for investors through various forms of corporate restructuring like external restructuring and internal restructuring. 'External restructuring' involves changes in a firm's asset mix through mergers and acquisitions, divestitures, divisional buyouts, and spin-offs. 'Internal restructuring' involves changes in a firm's value chain, organizational design, governance structure, and compensation policies.

Caselet 2

3. Some of the defense strategies that are being practiced by the corporates across the world are as follows:

Exchange Offer – Offering debt or preference shares in exchange of equity.

Golden Parachute – Provision in the employment contracts of top management providing for heavy compensation for loss of jobs following a change of management. Compensation includes items such as stock options, bonuses, severance pay, etc. Golden parachutes can run in to millions of dollars and cost the firm a lot of money.

Green Mail – Buying back shares from market or large stockholder at a premium to market price.

White Knight – To prevent a hostile takeover, a friendly company is invited to takeover the company.

White Squire – A third party, friendly to the management, will be invited to help a company to avoid an unwanted takeover without taking over the company on its own.

People Pill – Sometimes, the entire management team threatens to resign, in the event of a takeover. This threat is especially useful if it is a good management team. Losing it could seriously affect the company's performance, hence an invader may not really attempt a takeover.

Poison Pill – This creates securities that provide their holders with special exercisable rights only after a triggering event (a tender offer or accumulation of specified percentage

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of target shares). Exercise of the rights would make it more difficult and/or costly for an acquirer to takeover the target company against the will of its Board of Directors.

Purchase or sale of the assets of the company by/to a third company, which makes the target company less attractive to the bidder.

Caselet 3

4. The cooperation of two or more individuals/corporations/businesses in a specific enterprise with an agreement to share profit, loss and control is known as a joint venture. Joint ventures have the following characteristics:

- Contribution of money, property, knowledge, efforts, skills, or other asset(s) to the common project by the partners.
- Joint property interest in the subject matter of the venture.
- Right of mutual control or management of the enterprise.
- Expectation of profit, or presence of adventure.
- Right to share the profit.
- Usual limitation of the objective to single undertaking or adhoc enterprises.

5. The following advantages encouraged Sony to form a joint venture with Ericsson:

Firstly, Ericsson's communications infrastructure such as base stations is strong. Access to communications infrastructure information is a must to produce mobile handsets.

Secondly, Ericsson has wireless communications technology that could be converged with Sony's design capability and user-face technology for consumer products.

Thirdly, Ericsson has a strong pipe with mobile communications carriers. Currently, Ericsson markets its mobile handsets to carriers in over 100 countries around the world.

Lastly, Sony and Ericsson can share R&D costs pertaining to next-generation cell phones to reduce burden.

Caselet 4

6. The success or failure of a new organization depends on the senior executives who are selected to head the various functional areas. Poor decisions will have a long-term impact on the performance of the company. It is not wise to allow talented individuals to quit the jobs as it is time consuming, risky and expensive to replace them later.

How to Retain Key Employees during M&As?

Retaining key employees during M&As is a major issue in corporate boardrooms. Regulation in each country across the world plays an important role during M&A. If the top brass concentrates on getting regulatory approval after the announcement of the merger while ignoring everything else till the time it is approved, what will be the situation? In the process, the company may lose its key employees. The urgency of the situation compels it to focus on something that is vital to the success of any merger – motivating and bringing people together as soon as possible to discover the prolific ways to run the organization. Following are some of the tips that can be followed by the top brass to retain the key employees:

- The selection process should stress on business success, decisiveness and communication and relationship skills. The merger period is not the right time to recruit the people who need extra weeks/months to get things done. The team should set-up the appropriate selection process/criteria and then select as many top people

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as possible. It should be predetermined that no one leaves the room until they've made their decisions – including back-up choices for people who turn them down and alternative jobs for people excluded from the top list of 100 but still want to continue.

- Another trick to retain key managers is to use a plan known as 'Stay Pay', which is a bonus for people who stay until the merger is approved. Recently, CL (a foreign institutional investor) in India was able to enforce this concept to retain executives after their involvement in a scandal came to light and their broking license was canceled by the authorities.

Last but not the least, the top brass should give more priority to urgent and crucial matters such as getting the top team in place quickly, developing an effective relationship with other counter parts and focusing on achieving performance goals, etc.

Caselet 5

7. The employer has enough flexibility in determining the amount of grants for various employees. Some companies offer the same number of options, etc., across the board to all employees. Most grant it on the basis of salary and grade levels. It is possible to set/fine tune the grant levels on performance parameters which may be set at an individual level, group, a division level or for the company as a whole. Since, ESOPs are basically a pay-for-performance rewards, the level of grants should be decided based on the performance and responsibility handled.

8. Internationally, ESOPs have been used as extensively in closely held companies as in listed companies. ESOPs in closely held companies retain all the distinct advantages. However, since the shares are not publicly traded, employees require to be provided with an exit option. There are many effective strategies and approaches to handle the repurchase obligations.

Caselet 6

9. The company can give loan to the trust to buy-back its shares from the market. Subsection II of Section 77 of the Companies Act allows the granting of this loan by the company to the trust.

10. Profits from sale of shares (ESOPs) are taxed as capital gains.

Long-term Capital Gains

If the employees hold the shares for more than 12 months, then the gain is a long-term capital gain. Tax is charged according to the rates prescribed in the Annual Finance Act, which at present is 20% with an added surcharge of 10%.

Long-term Gain = Sale Consideration – Indexed Cost of Acquisition

However, from the assessment year 2000-2001 and onwards, Section 12i (I) provides that, where tax on long-term capital gains on listed securities in usual manner (as specified above) goes above 10% of capital on the said security computed without indexation of cost of acquisition, then such excess shall be ignored. Simply put, the tax rate on long-term capital gains arising from transfer of listed securities will be 10% of the gains computed without indexation of cost.

Short-term Capital Gains

If the shares are held for less than 12 months, it is a short-term capital gain. In case of short-term capital gains, the same is added to other income of the person and tax is charged as per the annual Finance Act rate.

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11. Normally, the equity shares underlying the stock options are eligible for bonus and right issue. This however, is a part of designing and structuring and can be customized to a company's policies and needs.

Caselet 7

The various methods used for valuing a business are as follows:

12. Asset Valuation Method

This method is frequently used in manufacturing and retail businesses as they have a lot of physical assets in inventory. Generally, it is based on inventory and improvements that have been made to the physical space used by the business. Discretionary cash from the adjusted income statement can also be included in the valuation.

Capitalization of Income Valuation Method

This method is often used by service organizations as it places the greatest value on intangibles (services) while putting no credit for physical assets. Capitalization is defined as the Return on Investment (ROI) that is expected. Simply put, one ranks a list of variables with a score of 0 to 5 based on how strong the business is in each of those variables. The scores are averaged to arrive at capitalization rate that is used as a multiplication factor of the discretionary income to find out the business value.

Adjusted Book Value Method

It is one of the least controversial valuation methods and is based on the assets and liabilities of the business.

Capitalized Earning Approach

This method is based on the rate of return in earnings that the investor expects. For risk-free investments, an investor would expect less return (7-8 percent). Small businesses usually are expected to have a rate of return of 20-25 percent. Consequently, if the business has expected earnings of Rs.50,000, its value might be estimated at Rs.2,00,000 i.e. {2,00,000 x 0.25 = 50,000}.

Cash Flow Method

Cash flow method is based on how much of a loan one could get based on the cash flow of the business. The cash flow is adjusted for depreciation, amortization and equipment replacement and then the loan amount is estimated with traditional loan business calculations. The amount of the loan is the value of the business.

Cost to Create Approach

This approach of business valuation is used when the buyer desires to purchase an existing functional business to save start-up cost and time. The buyer estimates what it would cost for less start-up what is not there in this business plus a premium for the saved time.

Debt Assumption Method

This method normally gives the highest value. It is based on how much debt a business could have and still operate, using cash flow to pay the debt.

Value of Specific Intangible Assets Appraoch

This method is more helpful when there are specific intangible assets that come with the acquired business and are highly valuable to the purchaser. To cite an example, a customer base will be valuable to an insurance or advertising agency. The value of the business is based on how much it would have cost the purchaser to generate this intangible asset himself.

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Discounted Cash Flow Method

Discounted cash flow method is based on the assumption that a rupee received today is worth more than one received in the future. It discounts the business's projected earnings to adjust for risk, real growth and inflation.

Multiple of Earnings Method

This is one of the most familiar methods used to value a business. Under this method, a multiple of the cash flow of the business is used to estimate its value.

Excess Earning Method

This method is identical to that of Capitalized Earning Approach, but return on assets is made separate from other earnings that are interpreted as the 'excess earnings'. Return on assets usually is estimated from an industry average.

Multiplier or Market Valuation Method

This method uses an industry average sales figure from recent business sales in comparable businesses as a multiplier. For example, the industry multiplier for an advertising agency might be 0.75, which is multiplied by annual gross sales to find out the value of the business.

Owner Benefit Valuation Method

The value of the business is calculated by multiplying 2.2727 times the owner benefit. This method of valuation is mostly followed in the US markets.

Rule of Thumb Methods

These methods are quick and directly based on industry averages that help in providing a starting point for the valuation. Though not popular with financial analysts, this is an easy way to get an approximate value on what our business might be worth.

Tangible Assets Method

Tangible assets method is often used for businesses that are losing money. The value of the business is based basically on what the current assets of the business are worth.

Caselet 8

13. **Dawn Raid**

This is when a firm/investor purchases a large number of shares of the company immediately when the stock markets open in the morning. Normally, a broker does the buying on behalf of the acquirer to avoid drawing attention to the buying. It builds up a substantial stake in its target at the current stock market price. As this is done early, in the morning hours, the target firm usually remains ignorant about this until it is too late and the acquirer has already swallowed the controlling interest.

Poison Pill

Poison pill is a technique used by companies to avoid a hostile takeover by making its stock prices less attractive to the acquirer. There are two types of poison pills:

i. **Flip-in**

This allows current shareholders, except the acquirer, to buy more shares at a discount.

ii. **Flip-over**

Under this plan, the shareholders are given a common stock dividend in the form of rights to acquire the firm's common or preferred stock at an exercise price above the market price. In the case of the merger taking place, the rights flip-over to permit the holder to purchase the acquirer's shares at a heavy discount.

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If investors fail to take part in the poison pill and buy stock at the discounted price, then the outstanding shares will not be diluted enough to defend against a takeover.

Saturday Night Special

A sudden attempt by one company to take over another by making a public tender offer. The name comes from the fact that this practice used to be done over the weekends.

Caselet 9

14. As per the guidelines of the RBI, Indian banks are not allowed to finance the merger and acquisition activities. However, there are a few foreign banks that have found ways to get over the traditional RBI guidelines restricting banks from financing M&A deals. These foreign banks have been funding Indian M&As for quite sometime now. To cite an example, Bank of America financed Gujarat Ambuja for acquiring DLF Cement and funded Grasim (a flagship company of the Birla Group) for acquiring the brands of Coats Viyella. But, such M&A financing deals are few and far between. The only financial institution that is taking some interest in financing M&A deals is the ICICI. The French cement leader Lafarge partly financed its takeover of Tisco's cement division through loans from HDFC and ICICI. Similarly, some of the acquisitions in India are also partly financed by venture capitalists. For instance, venture capital funds Mezzanine and Schroders each have financed 10 million pounds in the Tata-Tetley deal.

Caselet 10

15. In a spin-off process, the parent company distributes some/all of its equity ownership in a subsidiary company as a pro-rata dividend to its shareholders. In rare cases, the spin-off may be accomplished through a rights offering.

On the other hand, under an equity carve out (also known as a partial spin-off), the parent company sells a stake for less than 20% in an initial public offering and/or rights offering and typically spins-off the remaining interests to existing shareholders at a later date. Hence, the asset item 'subsidiary investment' in the balance sheet of the parent company is replaced with cash. The parent company retains control of the subsidiary but gets cash. This may be the first stage of a two-stage divestment transaction.

Caselet 11

16. A takeover that goes against the wishes of the target company's management and Board of Directors is called as hostile takeover. These types of takeovers usually generate ill-will since the moral of the target firm turns to animosity towards the acquiring firm. On the other hand, a friendly takeover is just the opposite of a hostile takeover where the entire takeover process goes according to the will of the target firm.

17. **Staggered Board:** In this type of antitakeover amendment procedure, the staggered or classified Board of Directors delay the effective transfer of control in a takeover. The rationale behind such an act is to assure continuity of policy and experience.

Poison Pill: It is also called as shareholders' rights plans as, in the event of a hostile takeover, the board gives the shareholders (except for the would-be acquirer) the right to purchase shares in their own company or in the acquiring company at a large discount (usually half price) in case the bidder acquires a certain percentage of the outstanding shares. Shareholders perceive pills as one of the most powerful antitakeover measures, but companies believe they simply compel a would-be acquirer to negotiate with the board. If the board sanctions the deal, it can redeem the pill; if not, the potential acquirer were to go on anyway, and the pill could be set-off. Other shareholders are then able to purchase the shares at half price, the target company would become financially unappealing and the voting power of the potential acquirer would be diluted. It means acquiring the company under those terms would be just like taking a poison pill.

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Caselet 12

Some of the benefits and limitations of vertical integration are as follows:

18. Benefits

- Brings down purchasing and selling costs.
- Builds better coordination among functions and capabilities.
- Protects proprietary technology.

Limitations

- Reduced flexibility as organization is locked into product and technology.
- Complexities in integrating various operations.
- Financial costs of acquiring or starting.

Caselet 13

19. Business brokers handle smaller business deals. They charge a percentage of the purchase price (usually around 10%) as "commission" for their services. On the other hand, M&A specialists handle larger and middle market businesses. They charge a flat fee or an hourly fee, with a part collected in advance.

20. Merger is a lengthy and cumbersome exercise that involves preparation and initial negotiations, due diligence, the purchase and sale, and finally portfolio transfers, all involving financial, legal and human implications. They can eat up a substantial amount of time and money, legal and tax complications, and problems with mixing corporate cultures. It has been estimated that around 50% of the mergers never achieve the initial goals (both marketing and financial) as projected. It is quite interesting to know that this percentage has remained almost stable over the last four decades in spite of the growth of merger as a feasible option for business.

Caselet 14

21. Internal development refers to the strategies adopted by the company to grow the business by building up the needed assets (people, buildings, machinery, or whatever) from inside rather than the outside sources.

External Growth Strategies (M&As) are Implemented when the

- firm is in the maturity stage.
- industry in which the firm wants to enter imposes high entry barriers.
- industry in which the firm wants to enter is not closely related to the existing one.
- firm is not willing to accept time frame and development costs of starting the new business.
- firm is not willing to shoulder the risks of starting the new business.

Internal Growth Strategies are used when the

- firm is new or in a growth stage.
- industry in which the firm wants to enter has low entry barriers.
- industry in which the firm wants to enter is closely related to the existing one.
- firm is willing to accept time frame and development costs of starting the new business.
- firm is willing to accept risks of starting the new business.

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Caselet 15

22. Under purchase method, the acquirer is treated as having purchased the assets and assumed liabilities of the acquiree, which are all written up or down to their respective fair market values. The difference between the purchase price and the net assets acquired is classified as "Goodwill".

23. The merger will form India's only world class, fully integrated energy company with operations ranging from oil and gas exploration, production, refining and marketing, petrochemicals, power and textiles. With this merger move, the Reliance group would become fully diversified, both in terms of products and portfolio, contributing around 3% to India's GDP. The merger would bring the following benefits:

- Significant benefits of scale, of complete integration
- Cost efficiencies
- Productivity gains
- Optimization of fiscal incentives
- Eradication of costs associated with "Transfer Price" mechanism and savings in Sales Tax.

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Part VI: Model Question Papers
(with Suggested Answers)

Each model question paper consists of two papers – Paper I and Paper II. Paper I contains three parts – A, B and C. Part A is intended to test the conceptual understanding of the students. It contains around 30 multiple-choice questions carrying one point each. Part B contains problems and caselets with an aggregate weightage of 46-50 points. Part C consists of essay-type questions with emphasis on practical applications carrying about 20-24 points.

Paper II consists of a Case Study and Caselets, which test the skills of the candidates in adopting an integrated approach to either real or simulated situations. The case study tests primarily the quantitative abilities of the candidates whereas the caselets test qualitative aspects.

Students are requested to note that this is an indicative format of the question paper in general and that the ICFAI University reserves the right to change, at any time, the format and the pattern without any notice. Hence, the students are advised to use the model question papers for practice purposes only and not to develop any exam-related patterns out of them.

The suggested answers given herein do not constitute the basis of evaluation of the students' answers in the examination. These answers have been prepared by the faculty members of the ICFAI University with a view to assist the students in their studies. And, they may not be taken as the only answers for the questions given.

Model Question Paper I

Time: 6 Hours **Total Points: 200**

Paper I

Time: 3 Hours **Points: 100**

Part A: Basic Concepts (30 Points)

Answer all the questions. Each question carries one point.

1. Sell-off of a firm represents which of the following restructuring activities?

a. Expansion.

b. Contraction.

c. Corporate Control.

d. Change in the ownership structure.

e. All of the above.

2. Which of the following statements is true regarding golden parachute?

a. Requires a high percentage of stockholders to approve a merger.

b. Awards large termination payments to existing management if control of the firm is changed and management is terminated.

c. Delays change of control for several years.

d. Pays substantial premium for a significant shareholder's stock in return for the stockholder's agreement that he or she will not initiate a bid for control of the company.

e. None of the above.

3. In the context of the theory of a firm, who among the following do not hold agency relationships?

a. Owners and managers.

b. Equityholders and debtholders.

c. Suppliers and customers.

d. Firm and customers.

e. Firm and employees.

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4. In the basic CAPM equation, $k_e = R_f + [R_m – R_f] \beta$, what does $[R_m – R_f]$ represent?

a. Risk-free rate.

b. Market rate of return.

c. Risk premium.

d. Risk.

e. All of the above.

5. What is the value of a firm whose projected free cash flow is $1 million, WACC is 12%, and expected annual cash flow growth rate is 6%?

a. $16.7 million.

b. $ 17.6 million.

c. $ 8.33 million.

d. $ 10 million.

e. $ 14.8 million.

6. Which of the following is true?

i. $NPV = GPV – I_O$

ii. $PVIF_{(r, n)} = 1/FVIF_{(r, n)}$

iii. EBIT = NOI + Depreciation.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (ii) and (iii) above.

7. The management of firm Alpha is more efficient than the management of firm Beta, and the efficiency of firm Beta is brought up to the level of firm Alpha, through a merger. Which theory of merger is this?

a. Differential Managerial Efficiency.

b. Inefficient Management.

c. Operating Synergy.

d. Strategic Realignment.

e. Pure Diversification.

8. Which of the following theories attempts to explain why target shares seem to be permanently revalued upward in a tender offer regardless of its success?

a. Information and Signaling theory.

b. Agency problem and Managerialism.

c. Strategic alignment to changing environment.

d. Undervaluation.

e. Redistribution.

9. Which of the following parameters does not influence the free cash flows while estimating on a gross basis?

a. Growth rate.

b. Net income.

c. Tax rate.

d. Depreciation.

e. Investment.

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10. Which of the following factors play a role in making disinvestment decisions?

i. Oppurtunistic.

ii. Planned.

iii. Forced.

a. Only (i) above.

b. Only (iii) above.

c. Both (ii) and (iii) above.

d. Both (i) and (ii) above.

e. All of the above.

11. Which of the following refers to low grade high yield bonds?

a. Fallen angels.

b. Junk bonds.

c. Chinese paper.

d. Both (a) and (b) above.

e. All of the above.

12. Which of the following is/are true regarding joint ventures?

i. Joint venture participants exist as a single firm.

ii. Joint venture may be organized as a partnership, a corporation, or any other form of business organization.

iii. Joint venture participants continue to exist as separate firms with the joint venture representing a newly created business enterprise.

iv. Joint ventures are of unlimited scope and duration.

a. Both (i) and (ii) above.

b. Both (ii) and (iii) above.

c. Both (iii) and (iv) above

d. Both (i) and (iv) above.

e. None of the above.

13. Which of the following is a type of stock bonus plan which invests primarily in the securities of the sponsoring employer firm?

a. MLP.

b. Junk bond.

c. ESOP.

d. LBO.

e. None of the above.

14. Which of the following is a new organizational form which offers the investors, liquidity via an organized secondary market for the trading of partnership interests?

a. Partnership.

b. Master limited partnership.

c. Employee stock option plan.

d. Private limited company.

e. Joint stock company.

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15. X ltd., a public corporation, is transformed into a privately held firm. Which of the following terms describes the above transaction?

a. Sell-off.

b. Going private.

c. Divestiture.

d. Partnership.

e. Management buyout.

16. Which of the following is a/are motive(s) for an international merger?

a. Political and economic stability.

b. Resource poor domestic economy.

c. Differential labor cost.

d. Both (a) and (c) above.

e. All of the above.

17. Two classes of common stock with equal rights to cash flows, but with unequal voting rights are called

a. Equity Stock

b. Preference Stock

c. Dual Class Stock

d. Hybrid Stock

e. None of the above.

18. Which of the following indicate(s) the long range strategic plans?

i. Consideration of capabilities, missions and environmental interaction from the point of view of the firm and the divisions.

ii. Emphasis on particular goals and objectives.

iii. Recognition of the needs in relating the firm's changing environment and constituencies effectively.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (i) and (iii) above.

19. In which of the following types of firms is the free-rider problem prominent?

a. Merger of a horizontal type.

b. Merger of a vertical type.

c. Diffusely-held corporation.

d. Reverse merger.

e. All of (a), (b), (c) and (d) above.

20. The general goals of a firm are subject to

i. its relationship with the firm's growth

ii. Quantification

iii. past employees' records.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. All of (i), (ii) and (iii) above.

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21. Which of the following describes an activity where outside shareholders receive cash dividends and insiders i.e., the managers and employees receive new shares instead of cash dividends?

a. Leveraged buyout.

b. Management buyout.

c. Management buy-in.

d. Leveraged cash out.

e. All of the above.

22. Which of the following is not a financial takeover defensive measure?

a. Poison put.

b. Golden parachute.

c. Leveraged cash out.

d. Standstill agreement.

e. None of the above.

23. In a takeover bid when the offer price is greater than the price of un-purchased shares it is called

a. Back-end loaded offer

b. Two-tier offer

c. Partial offer

d. Front-end loaded offer

e. All of the above.

24. Which of the following is an antitakeover amendment which provides for staggered, or classified, Board of Directors to delay effective transfer of control?

a. Supermajority amendment.

b. Fair price amendment.

c. Classified board.

d. Dual capitalization.

e. None of the above.

25. Which of the following statements is/are false?

a. According to the replacement cost method, continuing value is equated with the expected replacement cost of fixed assets of the company.

b. A major limitation of the replacement cost method is the fact that only tangible assets can be replaced.

c. As per the market to book ratio method, the continuing value of the company at the end of the explicit forecast period is assumed to be some multiple of its book value.

d. Both (a) and (c) above.

e. None of the above.

26. The sustainable growth rate of a firm

a. Increases when the firm goes in for a public issue

b. Increases with an increase in the pay-out ratio

c. Decreases with an increase in debt

d. Increases with increase in profits

e. Is not affected by a decrease in the assets to sales ratio.

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27. Which of the following statements is/are false?

a. The cost of a merger to the buyer equals the gains realized by the seller.

b. The cost of a merger and the economic gain produced by it are always independent.

c. Buyers almost always gain in mergers.

d. Both (a) and (c) above.

e. Both (b) and (c) above.

28. Identify the correct statement.

a. An exchange ratio based on market prices reflects current earnings, growth prospects and risk characteristics.

b. Market prices may not be very reliable when trading is meager.

c. Market prices have considerable merit when the shares of the acquiring firm and the target firm are actively traded in a competitive market.

d. Market prices may be manipulated by those who have a vested interest.

e. All of (a), (b), (c) and (d) above.

29. A company is not allowed to buy-back its shares

a. From the existing shareholders on a proportionate basis through the tender offer

b. From the open market through book building process

c. From odd lot holders

d. Through spot transactions

e. Both (c) and (d) above.

30. When Firm A merges with Firm B, the NPV of the merger to Firm A will be

a. $PV_{AB} - PV_A - PV_B$

b. $Cash - PV_B$

c. $PV_{AB} - PV_A - Cash$

d. $Cash - PV_A$

e. $PV_{AB} - PV_A - PV_B - Cash$.

Part B: Problems (50 Points)

Solve all the problems. Points are indicated against each problem.

1. Star, a textile manufacturing company based in Tamil Nadu, has aggressive plans for expanding its market share. The company is planning to set-up a manufacturing base near Delhi to cater to the customers based in North India. To get faster market access the company has decided in favor of an acquisition.

The company has undertaken a detailed study of prospective takeover targets and finally identified Horizon Textiles Ltd., a Delhi based manufacturer, as the company which fits in best with its strategic goals. After having collected the relevant information, the company is now faced with the case of arriving at a reasonably correct value of Horizon Textiles in order to begin takeover negotiations. The company's balance sheet is given below. Additional information is also given.

Use the Discounted Cash Flow approach to value the company.

Balance Sheet of Horizon Ltd., as on 31st December 20x1:

(Rs. in crore)

Liabilities	Amount	Assets		Amount
Share capital	4	Land	0.20	
Reserves	0.3	Buildings	2	
Term liabilities		Machinery	5	
Banks	5	Other	0.30	
Other	1	Gross FA		7.5
Current liabilities	15	Less Acc. Dep.		3.2
				4.3

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(Rs. in crore)

Liabilities	Amount	Assets	Amount
		Add Capital WIP	0.8
		Total Fixed Assets	5.1
		Inventories	6.0
		Receivables	8.0
		Other	6.2
	25.3		25.3

Capital expenditure of Rs.4.3 crore will be incurred in 20 x 2 and 14 crore in 20 x 3.

Other Information

Particulars	20 x 1	20 x 2	20 x 3	20 x 4	20 x 5	20 x 6
Net Sales	55	58	80	105	120	125
Raw Material cost	24	25	33	44	47	48
Power	1	1.15	1.6	2.15	2.2	2.4
Employee related cost	2.8	3.05	4	4.4	5	5.5
Administration expenses	1.05	1.20	1.60	1.85	1.95	2.05
Depreciation	0.5	0.7	2.05	2.10	2.12	2.14

The tax rate for the company is 30%. There is no charge on deferred taxes.

The stock is currently trading at Rs.25 per share. The Beta of the stock is 0.90.

The risk-free rate of return is 11% and market risk premium is 10%.

The free cash flow is expected to grow at a rate of 16% p.a after 5 years.

Bank finance carries an interest rate of 20%.

Pattern of Financing

Additional capital (issued at par) 13 crore

Term loan 11 crore.

(14 points)

2. Neron is an electricity supply company that supplies power to homes and businesses in Mumbai and its environs. It is a monopoly whose prices and profits are regulated by the state of Maharashtra. The firm is in stable growth. The rates are regulated and it is unlikely that the regulators will allow profits to grow at extraordinary rates. The Beta is 0.80 and has been stable over a considerable period of time. In addition, we have the following information.

The Treasury bond rate is 7% and the market rate of return is 12%.

Earnings per share in 2001 = Rs.4

Dividend per share = 70%

Expected growth rate in dividends = 5 %

Estimate the value of equity in the year 2002.

(6 points)

3. Two small manufacturing firms X and Y plan to merge. The revenues as a consequence to the merger will be Rs.2,00,000. Combining the firms will create economies of scale which will reduce the cost of goods sold from 65% to 60% of revenues. As a consequence to the merger, the combined firm will be able to enter new markets and is expected to increase its future growth in revenues from 5% to 6%. Calculate the combined value of the firm with Synergy. (Assume the cost of capital to be 9% and the firm pays no taxes)

(10 points)

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4. Kiran Ltd. & Vinay Ltd. are contemplating a merger deal in which Kiran Ltd. will acquire Vinay Ltd. The relevant information about the firms is given as follows:

(in million)

	Kiran	Vinay
Total earnings E	Rs.48	Rs.15
Number of outstanding shares S	10	7
Earnings per share EPS(Rs.)	4.8	2.14
Price earnings ratio P/E	8	7
Market price per share P(Rs.)	38.4	14.98

a. What is the maximum exchange ratio acceptable to the shareholders of Kiran Ltd. if the P/E of the combined firm is 7?

b. What is the minimum exchange ratio acceptable to the shareholders of Vinay Ltd. if the P/E ratio of the combined firm is 9?

(4 + 4 = 8 points)

5. Gemini Industries is the acquiring company which intends to acquire Leo Industries. Relevant information for both the companies is given as follows:

Company	Equity share outstanding	Share price (Rs.)	EAT (Rs.)	EPS
Gemini	10,00,000	25	20,00,000	2
Leo	1,00,000	10	2,00,000	2

Gemini Ltd. is considering 3 different acquisition plans.

i. Pay Rs.10 per share for each target share.

ii. Exchange Rs.25 cash and one share of Gemini Ltd. for every four shares of Leo Ltd.

iii. Exchange 1 share for every two shares of Leo Ltd.

Calculate

a. EPS of Gemini Ltd. under each of the three plans.

b. Share prices of Gemini Ltd. under each of the three plans, if its current P/E ratio remains unchanged.

(9 + 3 = 12 points)

Part C: Applied Theory (20 Points)

Answer the following questions. Points are indicated against each question.

1. Discuss the various modes of growth for a business.

(10 points)

2. The role of an employee is very crucial and critical both in pre- and post-merger periods. Discuss the role of employee before and after the merger.

(10 points)

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Paper II

Time: 3 Hours **Points: 100**

Part D: Case Study (50 Points)

Read the case carefully and answer the following questions.

1. Using the discounted cash flow approach, find out the value of the Shipping Corporation of India. (The cost of equity capital can be assumed as 15%.)

(16 points)

2. What are the other techniques that can be used to value a company? Explain the one you consider the most appropriate in this case.

(8 points)

3. Analyze and comment on the capital structure of the company.

(6 points)

4. Evaluate the performance of the company with the help of ratio analysis.

(8 points)

5. Do you recommend disinvestment of Government's stake in this company? What are the alternative ways of disinvestment that can be adopted by GOI? Which one do you prefer? Why?

(12 points)

Following are the excerpts from the annual report of the Shipping Corporation of India for the year 1999-2000:

Financial Performance

Your directors are pleased to report that your company has achieved an increase in its gross earnings of over 7% over the previous year. The comparative position of the working results for the year under report vis-à-vis earlier year are as under:

(Rs. in crore)

		1999-2000		1998-99
Gross earnings		2,521		2,343
Gross profit (before interest, depreciation and tax)		638		613
Less: Interest & finance charges (Net)	86		101	
Depreciation	250	336	236	337
Profit before adjustments		302		276
Prior year's adjustments		(–)1		(–)3
Provision for Indian income tax		55		40
Net profit		246		233

Appropriations

The working results of your company for the year 1999-2000 after providing for prior period adjustments show a profit of Rs.246.24 crore. An amount of Rs.142.00 crore has been transferred to the special reserve fund under Section 33AC of the Income Tax Act, 1961. After adding a sum of Rs.67.25 crore (being the balance of profit and loss account brought forward from the previous year) and Rs.1.79 crore (being the amount transferred from capital reserve), the amount available for disposal works out to Rs.173.28 crore. Your directors propose to make the following appropriations from this amount:

i.	General reserve	Rs.50.00 crore
ii.	Staff welfare fund	Rs. 0.45 crore
	Total	Rs.50.45 crore

After the proposed appropriations, the surplus available is Rs.122.83 crore.

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Dividend

Your directors recommend payment of dividend @20% absorbing a sum of Rs.56,46,04,858.00 as follows:

	Rs.
On 28,23,02,420 equity shares of Rs.10 each fully paid-up	56,46,04,840.00
On ten equity shares of Rs.10 each on which Rs.9 paid-up	18.00
Total	56,46,04,858.00

In addition, dividend tax of Rs.5.65 crore will be payable by the company. The balance amount of Rs.60.72 crore is being carried forward to the next year accounts.

The announcement by the Government of the phased withdrawal of Administered Price Mechanism (APM) from 1.4.98 overshadowed all events connected with tanker operations in the year 1999-2000. With pricing and marketing mechanisms stated to undergo landmark changes, the whole fabric of the Oil Industry, including the transportation of crude and petroleum products, will weave into a more dynamic, vibrant and market responsive structure with lateral effects on transportation. The dismantling of the cost-plus system of remuneration for transportation of crude was the first stage of the withdrawal of APM. Accordingly, from 1.4.98 the Government notified that the remuneration for transportation of crude by sea shall henceforth be on the basis of market-related rates of freight. With a view to maintain a lead role as in the previous years in the transportation of crude, your company pursued the matter vigorously with all concerned resulting in your company being designated as the nodal agency for effective transportation of crude to Indian oil refineries, both from overseas sources of supply as well as along the Indian coastline.

Consequent upon your company being appointed as the nodal agency for crude oil transportation, discussions/negotiations were initiated with the Indian Oil Corporation (the designated nodal agency from the oil industry) to fix the freight rate for imported crude transportation as well as transportation of indigenous crude and lighterages along the coastline, while simultaneously negotiating for drawing up detailed terms and conditions of the Contract of Affreightment (COA). Your company has recently entered into a Memorandum of Agreement (MOA) with Indian Oil Corporation (IOC) and that your company would be in a position to sign COA with IOC shortly.

Tanker market was firm during the year under review. VLCC was relatively more firm than other sectors. Crude oil prices which took a beating during the year, kindled hope for those economies which are presently facing worst economic slowdown. This helped oil demand/supply and tonnage requirement to strike a reasonable balance.

Indian position was not immune to these international developments. Share of crude parcels on C.I.F. basis decreased last year compared to 1998-99. SCI has lifted about 58% of the total crude oil imports during 1999-2000. With the increasing refining capacity of the private sector which may go up to 60% of total refining in the country by the beginning of 21st century, entire transportation matrices would demand effective allocation of the existing tonnage and acquisition of new tonnage. In order to cater to increasing demand of tonnage, SCI has drawn an ambitious tanker acquisition plan spread over a period of five years.

During the year under review, your company broke new grounds in crude tanker operations by commencing ship-to-ship lighterage of crude at Saugor (on the east coast of India, near Haldia) and this is the first instance of any shipping company handling ship-to-ship crude transfer in the open sea in Sandheads/Saugor area. The lighterage operations at this location which began in early September, 1999 have resulted in ship-to-ship transfer of crude of 1.6 MMT up to March, 2000.

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FINANCIAL POSITION

(Rs. in crore)

	1997-1998	1998-99	1999-2000
Liabilities			
a. Paid-up capital			
i. Government	226.19	226.19	226.19
ii. Others	56.11	56.11	56.11
b. Reserves and surplus			
i. Free reserves and surplus	939.65	1,112.25	1,155.72
ii. Share premium account	0.00	0.00	0.00
iii. Capital reserves	17.51	15.72	13.94
iv. Committed reserves	64.14	64.19	206.47
c. Borrowings from			
i. Government of India	562.34	534.77	498.65
ii. Banks/Financial institutions	56.49	537.03	603.28
iii. Other loans	67.58	67.58	92.50
iv. Deferred payment credits	1,518.19	783.85	707.01
v. Interest accrued and due	18.57	18.57	0.00
d. Current liabilities and provisions	744.49	817.75	931.17
	4,271.26	4,234.01	4,491.04
Assets			
e. Gross block including ships retired from operation	4,459.53	4,562.04	4,782.25
f. Less: Cumulative depreciation	1,593.87	1,796.06	2,014.20
g. Net block	2,865.66	2,765.98	2,768.05
h. Capital work-in-progress	66.02	151.26	239.29
i. Investments	0.44	0.44	0.44
j. Current assets, loans and advances	1,308.66	1,281.40	1,453.69
k. Miscellaneous expenditure not written off	30.48	34.93	29.57
	4,271.26	4,234.01	4,491.04
l. Working capital [j – d(i) – c(v)]	545.60	445.08	522.52
m. Capital employed (g + l)	3,411.28	3,211.06	3,290.57
n. Net worth [a + b(i) + b(ii) – k]	1,191.47	1,359.62	1,408.45
o. Net worth per Re. of paid-up capital	4.22	4.82	4.99

Ratio Analysis

Some important financial ratios indicating the financial health and working of the company at the end of last three years are as under:

(Rs. in crore)

	1997-98	1998-99	1999-2000
A. Liquidity ratio:	1.72	1.53	1.56
Current ratio (current assets to current liabilities and provisions and interest accrued and due but excluding provision for gratuity			
B. Debt-equity ratio:	1.80	1.41	1.35
Long-term debt to equity [c(i) to (v) but excluding short-term loans /o]			
C. Profitability ratio:			
a. Profit before tax to:			
i. Capital employed	9.48%	8.52%	9.16%
ii. Net worth	27.14%	20.12%	21.39%
iii. Sales	15.19%	12.05%	12.48%
b. Profit after tax to equity	114.56%	82.63%	87.23%
c. Earning per share (Rs.)	11.46	8.26	8.72

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Working Results

Working results of the company for the last three years are tabulated below:

(Rs. in crore)

		1997-98	1998-99	1999-2000
i.	Operating earnings	2,128.90	2,269.72	2,414.45
ii.	Other earnings	120.38	172.26	107.04
iii.	Operating expenses	1,387.61	1,603.98	1,754.26
iv.	Interest	80.53	86.48	100.52
v.	Other non-operating expenses	449.05	474.92	365.45
vi.	Profit before tax	323.41	273.59	301.26
vii.	Tax provision	0.01	40.32	55.02
viii.	Profit after tax	323.40	233.27	246.24
ix.	Dividend	56.46	62.11	62.11

Share Price Data

Year	High (Rs.)	Low (Rs.)
2000	62.5	33
1999	45.0	21
1998	10.0	22

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Part E: Caselets (50 Points)

Caselet 1

Read the caselet carefully and answer the following questions.

1. What are ESOPs? Why do companies set-up ESOPs for employees?

(7 points)

2. How much can be put at stake under an ESOP to the employees?

(5 points)

A report titled "ESOP Design Practices 2001", covering a survey of 40 companies across the country (India), reveals that 92 percent of these 40 companies (IT and non-IT) have not changed their ESOPs regardless of the fall in stock prices in the recent past; that 55 percent have not addressed the situation in case of an acquisition and that 50 percent have not catered for rights issues and consequent diminution in value of the stock option.

The report, chalked out by ESOP Direct, of KP ESOP Consulting, includes 12 non-IT companies and 28 IT companies, making a total of 40 companies surveyed. The term IT includes IT services, manufacturing and products while the non-IT segment includes manufacturing and services. The survey was conducted to create data and make available a benchmark on the trends and practices of ESOPs. According to Mr. Ghate, Managing Director, ESOP Direct, "though the concept of ESOP is new in India, in terms of maturity India is at par with the UK, Japan and Australia, where also ESOPs are fairly new".

The survey also discovered that Indian recipients of ESOPs have not realized as yet that these are in the nature of incentives. Therefore, instead of encashing on the day of allotment, they stick to them. The moment they hang on, they take an investment decision, keeping themselves open to the risks of the market. Mr. Ghate has cited the example of the US where the ESOP is normally encashed the day it reaches the hands of the employees. India has also to follow the US practice of offering ESOPs in lieu of a part of the salary, to decrease variable compensation.

Caselet 2

Read the caselet carefully and answer the following questions.

1. What do you mean by 'Due Diligence'?

(6 points)

2. Define the meaning of the term 'Indemnification' in the context of M&A.

(8 points)

3. Discuss the importance of 'Confidentiality Agreement' in a M&A transaction.

(8 points)

Merger and Acquisition (M&A) strategies are undertaken for various reasons. It could be that both the parties want to increase buying power with suppliers, achieve consolidation of supply or markets, acquire a distribution channel for the current product line and minimize risk through product diversification. However, the process of M&A involves many intricate areas of law such as corporate, tax, employment and labor, securities, employee benefits, environmental, intellectual property and real estate. In the recent past, the number of M&A transactions has increased dramatically; so too has litigation arising from these transactions. M&A transactions usually involve two parties – the acquirer and the target. The acquirer generally acquires the stocks/assets of the target. Under the merger process, the target company merges into the acquirer. In a consolidation, the acquirer and target are both merged into a third new corporation. Regardless of the M&A structure, the usual transaction involves the following stages: Confidentiality Agreement, Letter of Intent, Due Diligence, Tax Considerations/Structure Issues, Contract Drafting and Review, Indemnification.

Caselet 3

Read the caselet carefully and answer the following question.

1. Briefly describe the factors involved in the valuation of the deal from the point of view of an acquirer.

(16 points)

Valuation is a crucial issue in M&A. Appropriate valuation will determine whether a M&A will produce the desired value or not. In one of the largest ever cash-deals of corporate India, domestic aluminium leader, Hindalco (an Aditya Birla Group Company) acquired down-stream major, Indal. The acquisition deal, announced in March 2000, involved a huge sum of Rs.1,008 crore for a 74.62 percent stake in Indal. The deal was designed in two parts. The first part of the deal that involved a shift of 54.62 percent stake of Alcan, in Indal, to Hindalco, is over now. The second part of the deal (for the balance 20% stake), for which an open offer has been made, has to be completed very soon.

The whole acquisition deal will be financed from the company's own internal reserves, investments and liquid funds. Presently, the company has liquid funds and investments totaling Rs.12 billion as against the aggregate cost of Rs.10.1 billion required for funding the acquisition. Even after the acquisition process, Hindalco could be able to maintain a D/E ratio of 0.2, which is below the industry average. The company has made it clear that it does have plans to issue fresh equity or raise debts for this purpose.

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Model Question Paper I

Suggested Answers
Paper I

Part A: Basic Concepts

1. *(b)* Selling off of a portion of the firm represents contraction of the business.

2. *(b)* A golden parachute awards large termination payments to existing management if control of the firm is changed and management is terminated. Supermajority voting provisions require a high percentage of stockholders to approve a merger, staggered terms for directors delay change of control for several years. A Greenmail pays substantial premium for a significant shareholder's stock in return for the stockholder's agreement that he or she will not initiate a bid for control.

3. *(c)* Agency relationships are those which exist between an agent and a principal. Suppliers and a customers are non-investor stakeholders of a firm and are not bounded by an agent and principal relationship.

4. *(c)* [$R_m - R_f$] represents the equity risk premium i.e., the average market price of risk (the extra price obtained over risk-free rate for investing in equity).

5. *(a)* As per the constant growth valuation model
   $V_0 = (FCFF)_1 / k - g$

   $V_0 = 1 / (0.12 - 0.06) = \$ 16.7$ million.

6. *(d)* Net present value is the gross present value net the present value of investments. Present Value Interest Factor (PVIF) is denoted as the reciprocal of Future Value Interest Factor (FVIF). Net operating income is equal to the EBIT.

7. *(a)* Differential managerial efficiency hypothesis is a theory which hypothesizes that more efficient managements takeover firms with less efficient managements and achieve gains by improving the efficiency of target.

8. *(a)* The information theory says that the tender offer sends a signal to the market that the target shares are undervalued, or alternatively the offer signals information to target management which inspires them to implement a more efficient strategy on their own.

9. *(a)* The free cash flow for a firm on the gross basis is calculated as

   Net income + Depreciation + After-tax interest – Investment.

10. *(e)* A number of factors play a role in making divestment decisions and are grouped under three general categories: (i) Opportunistic, (ii) Planned, and (iii) Forced. Opportunistic considerations are totally optional and are to be implemented in a reactive manner. Under the scenario of planned consideration, a company may have a profitable, well run division, but may go in for divestment to raise the necessary capital to invest in something new, or out of concern about the division's long-term future.

11. *(e)* The low grade high yield bonds called junk bonds today were called Fallen Angels in the 1930s and 1940s and Chinese Paper in the 1960s.

12. *(b)* Joint venture participants come together to form a medium-to long-term contract which is specific (limited scope) and flexible. It is a contract to work together for a specified period of time.

13. *(c)* The Employee Stock Ownership Plan (ESOP) is a defined contribution pension plan designed to invest primarily in the stock of the employer firm.

14. *(b)* The MLP is a new organizational form which offers investors the structure and tax attributes of more traditional partnerships, but differs in one key aspect i.e., it offers liquidity via an organized secondary market for the trading of partnership interests.

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15. *(b)* A going private transaction involves a transformation of a public corporation into a privately held firm.

16. *(e)* All the given alternatives are various motives for an international merger.

17. *(c)* Two classes of common stock with equal rights to cash flows, but with unequal voting rights are called dual class stock.

18. *(e)* The long range strategic plans include.

    i. Environmental reassessment.

    ii. Consideration of capabilities, missions and environmental interaction from the company's point of view.

    iii. Emphasis on process rather than particular goals or objectives.

    iv. Emphasis on iteration and iterative feedback process.

    v. Recognition of the need for coordination and consistency in the resulting long range planning processes with respect to individual divisions, product-market activities, and optimization from the standpoint of the firm as a whole.

    vi. Recognition of the needs to relate the firm's changing environment and constituencies.

    vii. Integration of the planning process into a reward and penalty or incentive system, taking a long range time perspective.

19. *(c)* In a diffusely-held corporation, it may not pay a small shareholder to make expenditures on monitoring the performances of the management. Shareholders may simply free ride on the efforts put in by other shareholders in monitoring and also share the results of improvement of the firm's performance.

20. *(b)* Goals are expressed in terms of the economy's growth, percentage of sales, etc. Hence, the goals are subject to quantification.

21. *(d)* In a leveraged recapitalization or a leverged cash out, outside shareholders receive a large one time cash dividend and managers and employee benefit plans receive new shares instead of the cash dividend. The cash dividend is financed mostly by newly borrowed funds. Hence, the firm's leverage is increased.

22. *(d)* A standstill agreement is a voluntary contract in which the stockholder who is bought out agrees not to make further investments in the target company during a specified period of time. It is not a financial defensive measure.

23. *(d)* In a takeover bid, when the offer price is greater than the price of un-purchased shares it is called back-end loaded offer. Front-end loading occurs in a two-tier, partial and any-or-all offers.

24. *(c)* Classified board is an antitakeover measure which divides a firm's board of directors into several classes, only one of which is up for election in any given year, thus delaying effective transfer of control to a new owner in a takeover.

25. *(e)* Replacement cost and market to book ratio methods are non-cash flow methods for the computation of the continuing value of a firm.

26. *(d)* As profit increases, investors are more optimistic about the firm and the growth rate also increases.

27. *(b)* The economic gains depend on the cost of the merger and the benefits derived out of it.

28. *(e)* Market value approach gives a better picture of the determination of exchange ratio.

29. *(d)* Share repurchases cannot be carried through spot transactions as per the SEBI guidelines.

30. *(c)* $PV_{AB} - PV_A - \text{Cash}$

    Where,

    PV_{AB} = Present value of new firm AB

    PV_A = Present value of firm A.

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Part B: Problems

1. Financial Projections

(Rs. in crore)

Particulars	20 x 1	20 x 2	20 x 3	20 x 4	20 x 5	20 x 6
Net Sales	55.00	58.00	80.00	105.00	120.00	125.00
Less Expenses						
Raw Material	24.00	25.00	33.00	44.00	47.00	48.00
Power	1.00	1.15	1.60	2.15	2.20	2.40
Employee related Expense	2.80	3.05	4.00	4.40	5.00	5.50
Administration Expense	1.05	1.20	1.60	1.85	1.95	2.05
Total Expenses	28.85	30.40	40.20	52.40	56.15	57.95
EBDIT	26.15	27.60	39.80	52.60	63.85	67.05
Depreciation	0.5	0.70	2.05	2.10	2.12	2.14
EBIT	25.65	26.90	37.75	50.50	61.73	64.91
NOPLAT [EBIT (1 – T)]	17.96	18.83	26.43	35.35	43.21	45.44
Gross CF [NOPLAT + Depreciation]	18.46	19.53	28.48	37.45	45.33	47.58
Gross Investments		4.30	14.00			
Free Cash Flows	18.46	15.23	14.48	37.45	45.33	47.58

Computation of Cost of Capital

Number of Equity shares (4 + 13)/10 = 17/10 = 1.7 crore

Market value of equity = 1.7 x 25 = 42.5 crore

Market value of debt = 5 + 1 + 11 = 17 crore

Total = 59.5 crore

Cost of Equity = 0.11 + 0.9 (0.10) = 0.20 or 20 %

Cost of Debt = k_d (1 – t)

= 20 (0.7) = 0.14 or 14 %

WACC = 20 x (42.5/59.5) + 14 x (17 / 59.5)

= 14.285 + 4 = 18.285 %

Computation of Continuing or Terminal Value

CV_6 = [47.58(1.16)] / [0.1828 – 0.16]

= 55.1928/0.228 = Rs.2,420.74 crore

Computation of the Value of Horizon Textiles

Value of a company

= Present value of cash flows + Non-operating assets – Debt

= $18.46/(1.1828) + 15.23/(1.1828)^2 + 14.48/(1.1828)^3 + 37.45/(1.1828)^4 + 45.33/(1.1828)^5 + 47.58/(1.1828)^6 + 2{,}420.74/(1.1828)^6$ – 17 crore

= 15.607 + 10.886 + 8.749 + 19.136 + 19.581 + 17.38 + 884.13 – 17 crore

= 975.47 – 17 crore

= Rs.958.47 crore.

2. Cost of Equity

$k_e = R_f + \beta (R_m - R_f)$

Where k_e = Cost of equity capital or the rate of return

R_f = The rate of return required on a risk-free investment

R_m = The required rate of return on market

= 7 + 0.8 (12 – 7)

= 11%

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Value of Equity $= D_1/(k_e - g)$

$D_1 = D_0(1 + g)$

$D_0 = 0.7 \times 4 = \text{Rs.}2.8$

Value of Equity $= 2.8\ (1.05)/0.11 - 0.05 = 2.94/0.06 = \text{Rs.}49.$

3.

(Amount in Rs.)

	Without Synergy	With Synergy
Revenues	2,00,000	2,00,000
Less: Cost of Goods Sold	1,30,000	1,20,000
EBIT	70,000	80,000
Growth Rate	5 %	6 %
Cost of Capital	9 %	9 %
Firm Value *	18,37,500	28,26,667

* Calculation of Firm Value with Constant Growth

The value of a firm is given as

$$= V_0 = \frac{X_0(1-T)(1-b)(1+g)}{k-g}$$

Value of the firm without Synergy = [70,000 (1.05)]/(0.09 – 0.05)

= Rs.18,37,500

Value of the firm with Synergy = [80,000 (1.06)]/(0.09 – 0.06)

= Rs.28,26,667

Value of Synergy = 28,26,667 – 18,37,500

= Rs.9,89,167.

4. a. $$ER_K = \frac{-S_K}{S_V} + \frac{(E_K + E_V)PE_{KV}}{P_K S_V}$$

Where,

- ER_K is the exchange ratio of the shares of Kiran Ltd. for each share of Vinay Ltd.
- E_K and E_V are the earnings before merger of Kiran Ltd. and Vinay Ltd. respectively.
- S_K and S_V are the number of outstanding shares.
- PE_{KV} is the PE ratio of the combined firm.
- P_K is the market price of each share of Kiran Ltd.

$$ER_K = \frac{-10}{7} + \frac{(48+15)7}{38.4 \times 7} = 0.212$$

The maximum exchange ratio acceptable to the shareholders of Kiran Ltd. is 0.212.

b. $$ER_V = \frac{P_V S_K}{(PE_{(KV)})(E_K + E_R) - P_V S_V}$$

$$= \frac{14.98 \times 10}{(9 \times 63) - (14.98 \times 7)} = 0.32$$

The minimum exchange ratio acceptable to the shareholders of Vinay Ltd. is 0.32.

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5. a. EPS of Gemini under each of the 3 plans:

i. EPS = Total earnings/number of equity shares

Total earnings = 20,00,000 + 2,00,000 = Rs.22,00,000

Since cash payment is made to the shareholders of Leo and there are no additional number of shares issued the number of shares will be only the shares of Gemini.

Hence, the total number of shares = 10,00,000

EPS = 22,00,000/10,00,000 = Rs.2.2

ii. The number of shares issued to shareholders of company B = 25,000 i.e., one share for every four shares.

Hence, total number of shares = 10,00,000 + 25,000 = 10,25,000

EPS = 22,00,000/10,25,000 = Rs.2.146

iii. The number of shares issued to the shareholders of company B = 50,000 i.e., one share for every two shares.

Hence, total number of shares = 10,00,000 + 50,000 = 10,50,000

EPS = 22,00,000/10,50,000 = 2.095

b. Share prices of Gemini Ltd. under each of the three plans

P/E ratio = MPS/ EPS

= 25 / 2 = 12.5 times

MPS = P/E ratio x EPS

i. MPS = 12.5 x 2.2 = Rs.27.5

ii. MPS = 12.5 x 2.146 = Rs.26.825

iii. MPS = 12.5 x 2.095 = Rs.26.1875

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Part C: Applied Theory

1. Profitable growth constitutes one of the prime objectives of most business firms. It can be achieved 'internally', either through the process of introducing/developing new products or by expanding the capacity of existing products the firm is engaged in. Alternatively, mergers and acquisitions of existing business firms can facilitate growth 'externally'.

Internal expansion enables a firm to retain control with itself and also provides flexibility in choosing equipment, technology, location etc., which are compatible with existing operations. However, internal expansion usually involves a longer period of implementation and greater uncertainties, and sometimes, raising adequate funds is problematic. A merger or an acquisition obviates, in most of the situations, finance problems as payments are normally made in the form of shares of purchasing company. Further, it also expedites growth, because the merged/acquired company already has the products or facilities that are required.

Some inefficient companies remain afloat because of management obstinacy or by default. One method of weeding them out is to get them liquidated, but in many cases that also implies wastage or destruction of valuable assets, established brand equity and even a good team. Mergers, acquisitions and takeovers are modern methods of preventing asset-destruction and systemic decay.

Merger: The incorporated company acquires all existing assets and liabilities of the two companies. A merger must be distinguished from a 'consolidation', which is a combination of two companies whereby an entirely new company is formed. Both cease to exist and shares of their common stock are exchanged for shares in the new company. When two companies of approximately the same size combine, the term consolidation applies. When there is significant difference in size, 'merger' is a more appropriate term.

Acquisition/Takeover: An acquisition/takeover happens when one company purchases the assets or shares, wholly or partially, of another company. The payment is in cash or in shares or other securities. The acquired company is not dissolved and it continues to exist as a separate entity.

Certain Strategic Considerations: Consider a company that is trading profitably in an area it knows well. Why should it consider either merging with or even acquiring another company? Why should it not just continue to do what it has proved it can do well – just expand its core business. This is so as it may not be possible for a company to develop its traditional business (often known as 'organic growth') fast enough to meet corporate objectives. Rather, it may decide to develop new business areas. The examples are vertical, horizontal, related, geographical and conglomerate diversifications.

Vertical Diversification occurs when a company diversifies into a new area one step removed from the traditional. This may either be "backwards" or "forwards". Vertical Backward Diversification occurs when a company enters an area traditionally catered to by one of its suppliers. Consider a dairy company that has always bought milk from a number of farms in order to convert it into bottled milk, butter, cheese and other dairy products. If that dairy company were to purchase the farms (and thus become its own supplier), it would have diversified vertically backwards. Equally, the dairy company could acquire the retail outlets that it has traditionally supplied, and diversified vertically forwards.

Horizontal Diversification occurs when a company seeks an acquisition or merger that enables it to undertake more of its traditional business. Thus, if one dairy company acquires others, it would have diversified horizontally.

Related Diversification occurs when a company uses its goodwill and reputation in a particular business to diversify into new areas where that good name and reputation will be recognized and translated into strategic advantage. An example is that of Wilkinson Sword. It was an old company with a good reputation manufacturing ceremonial military swords. Clearly, the market for these products was limited and declining. The company decided, very profitably, to diversify and manufacture disposable razor blades – a market previously dominated by Gillette.

Geographical Diversification is a form of the Horizontal diversification that occurs when a company seeks to expand its traditional business internationally or into a different area of the country. An example is that of the "Manchester Guardian", a newspaper traditionally centered on the north-west of England, evolved into a national newspaper ("The Guardian") which sought to appeal to readers in the whole of the United Kingdom. More recent examples would include breweries that had, traditionally, only supplied outlets in particular localities; they decided to launch their beers nationally.

Conglomerate Diversification: A company may decide that its strength lies in its ability to manage subsidiary companies – its managerial excellence being its distinguishing factor, the exact business area being largely irrelevant. Such a company may build a portfolio of subsidiary companies in diverse business areas, linked only by its perceived management ability. Such a company would be described as having adopted a strategy of Conglomerate Diversification.

Reasons for Diversification: Apart from the need to accelerate business growth (and, in particular, profit growth), there are several other reasons for strategic diversification. Some of them are: the need to secure supplies of raw materials, a firm customer base, eliminate a competitor, the opportunity of managing a business more profitably than its present management and synergistic advantages, the possibility of utilizing assets in a business more advantageously than its present management, the availability of a strong management team and cash position.

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2. Although some of the literature might give the impression that merging is primarily a financial question, more evidence is arising that the human factors are crucial to a merger's success.

Many problems develop when the executives of the acquiring company seem threatening to the target company, whose executives fear that they will have to leave the firm. In some, human relationships may be a much more significant factor in a successful merger than most analysts realize.

Apart from pre-merger problems, post-merger human difficulties often arise. The effects of mergers in terms of human costs include the much cited job losses and re-deployment. Psychological effects include trauma, uncertainty, stress, and a wide-held sense of uneasiness concerning job security. Bonds formed between the employee and employer can be ignored by a successor. Furthermore, the secrecy of the private firm is challenged in a public company. Winners' revenge on losers. Other symptoms include psychological shock waves, alienation, grief, a sense of loss at termination, preoccupation, eroded trust, and self-centered work activities.

Other labor-sensitive criticisms of takeovers are that aggressive entrepreneurs have too much say over other people's lives and over where plants and jobs will be located. Entire communities are at risk. All assets and staff not pertaining to the core focus of the industry are imperiled. Some opine that if an asset cannot be sold, it is liquidated, with momentous repercussions on staff and families.

Also, corporate cultures and policies can crash, as they did at IBM and Rolm. Top managers, who are being counted on, may leave the firm, as happened at Kodak. And the structure of relationships between the partners can create problems. Such implementation problems should be considered before a merger but often are not. Thus, after a merger is consummated, such pitfalls as low executive involvement in the post-merger integration process, breakdowns in reporting and control relationships between parent and acquired firm, changes in responsibility within the parent for overseeing the acquired firm's activities, and the attitudes of personnel in both firms can significantly affect the degree of its success.

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Paper II

Part D: Case Study

1. i. Market value of equity

Average share price in 2000 = Rs.47.75

No. of outstanding shares = 22.62 + 5.61 = 28.23

Market value of equity = 28.23 x 47.75

= Rs.1,347.98 cr.

ii. Tax Rate: The tax provision for 2000 as a proportion of profit before tax is taken as a surrogate of tax rate applicable to the company currently.

∴ Tax rate for 2000

$$= \frac{\text{Tax provision for year 2000}}{\text{Profit before tax for 2000}} = \frac{55.02}{301.26} = 18.26\%$$

Similarly, tax rate for 1999 $= \frac{40.32}{273.59} = 14.74\%$

iii. Cost of Debt: Total long-term debt (in 2000)

= 498.65 + 603.28 + 92.50 + 707.01

= Rs.1,901.44 cr.

Total interest paid in the year 2000 = Rs.100.52 cr.

$$\text{Pre-tax cost of debt} = \frac{100.52}{1901.44} = 5.29\%$$

iv. Cost of equity capital = 15% (given)

v. Cost of capital

$$= 15\% \times \frac{1,347.98}{1,347.98 + 1,901.44} + 5.29\% (1 - 0.1826) \frac{1,901.44}{1,347.98 + 1,901.44}$$

= 6.223% + 2.530% = 8.75%

vi. As there is no explicit period forecast for the future cash flows, the value of SCI can be approximated to its continuing value itself.

vii. To identify the growth rate, the growth rate in operating earnings is taken as an approximation of the growth rate in free cash flows.

$$g = \left(\frac{2,414.45\%}{2,128.90}\right)^{1/2} - 1 = 0.0649$$

(Rs. in crore)

Year	1999	2000
Profit before tax	273.59	301.26
Interest	86.48	100.52
Depreciation	236.00	250.00
EBIT	360.07	401.78
[EBIT (1 – T)] NOPLAT	306.99	328.41
Gross cash flow (NOPLAT + Depreciation)	542.99	578.41
Gross investments (Change in capital employed)	(200.22)	79.51
Free cash flow	743.21	498.90

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$$\therefore \text{ Value of SCI} = \frac{FCF(1+g)}{k-g}$$

$$= \frac{498.90(1+0.065)}{0.0875-0.065}$$

$$= \text{Rs.}23{,}614.60 \text{ cr.}$$

2. The other techniques which are used for valuation of a company are as follows:

- Value Driver Method
- Replacement Cost Method
- Price-to-Earnings Ratio Method
- Market-to-Book Ratio Method.

Value Driver Method: This method too uses the growing free cash flow perpetuity formula but expresses it in terms of value drivers as follows:

$$\text{Continuing Value}_T = \frac{NOPLAT_{T+1}(1+g/r)}{k-g}$$

Where,

$NOPLAT_{T+1}$ = expected net operating profit less adjusted tax for the first year after the explicit forecast period

g = constant growth rate of NOPLAT after the explicit forecast period

r = expected rate of return on net new investment.

This method is a different way of expressing the free cash flow.

Replacement Cost Method: Acording to this method, the continuing value is equated with the expected replacement cost of the fixed assets of the company.

This method suffers from two major limitations:

a. Only tangible assets can be replaced. The 'organizational capital' (reputation of the company, brand image, relationships with suppliers, distributors, and customers, technical know-how, and so on), as it cannot be separated from the business as a going entity, can be valued with reference to the cash flows the firm generates in future. Clearly, the replacement cost of tangible assets often grossly understates the value of the firm.

b. It may simply be uneconomical for a firm to replace some of its assets. In such cases, their replacement cost exceeds their value to the business as a going concern.

Price-to-Earnings Ratio Method: A commonly used method for estimating the continuing value is the price-to-earnings ratio method. The expected earnings in the first year after the explicit forecast period is multiplied by a suitable price-to-earnings ratio. The principal attraction of this method is that the price-to-earnings ratio is a commonly cited statistics and most executives and analysts feel comfortable with it.

Notwithstanding the practical appeal of the price-to-earnings ratio method, it suffers from serious limitations:

a. It assumes that earnings drive prices. Earnings, however, are not a reliable bottom line for the purpose of economic evaluation.

b. There is an inconsistency in combining cash flows during the explicit forecast period with earnings (accounting numbers) for the post-forecast period.

c. There is a practical problem as no reliable method is available for forecasting the price-to-earnings ratio.

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Market-to-Book Ratio Method: According to this method, the continuing value of the company at the end of the explicit forecast period is assumed to be some multiple of its book value. This approach is conceptually analogous to the price-to-earnings ratio and, hence, suffers from the same problems. Further, the distortion in book value on account of inflation and arbitrary accounting policies may be high.

Note: Candidate is expected to explain only one of the above methods.

3. The following ratios are calculated for the purpose of capital structure analysis and the performance evaluation of the company.

Year	1998	1999	2000
D/E Ratio (given in the case)	1.800	1.410	1.350
Total Assets/Net worth	3.580	3.110	3.190
Interest coverage ratio $\left(\frac{\text{EBIT}}{\text{Interest}}\right)$	5.020	4.160	4.000
ROI $\left(\frac{\text{EBIT}}{\text{TA}}\right)$	0.095	0.085	0.089
RONW $\left(\frac{\text{PAT}}{\text{NW}}\right)$	0.271	0.172	0.175
Net Profit Margin $\left(\frac{\text{Net Profit}}{\text{Operating Earnings} + \text{Other Earnings}}\right)$	0.144	0.096	0.098
PAT/PBT	1.000	0.853	0.817
Total Earnings/Total Assets	0.527	0.577	0.561

Capital Structure Analysis of SCI

The Shipping Corporation of India is a Government of India owned public sector undertaking. Most of the equity as well as debt of the company has been financed either directly by the Government or indirectly through one of its institutional channels of financing. It is, therefore, felt that debt and equity of the company should be viewed with a lesser difference between the two unlike other companies. Clear distinction between debt and equity is not much warranted here as both the sources of finance have come from a single source. Having said that it is observed that the debt-equity ratio is at a fairly comfortable level being less than 2 in spite of the company being in the capital-intensive industry. Further, it is observed that there is lesser and lesser dependence of the company on debt in the last 3 years as the ratio is continuously improving. The company, therefore, seems to be reflecting the general attitudinal change in corporate India, which is beginning to prefer equity more than debt. The interest coverage ratio is also at a fairly comfortable level indicating enough availability of funds with the company to meet its fixed charge obligations.

4. Performance Evaluation of Shipping Corporation of India

Based on the above reasoning, it is felt that Return on Investment (ROI) is the most appropriate measure of financial performance of SCI. It is observed from the calculations of ROI figures that ROI is quite low between 8 – 9%. A look at the RONW indicates quite high returns on equity at 17.5% currently. Such a wide difference between the two ratios can be explained as follows: The cost of interest and tax liabilities are fairly low for the company. One should also examine these ratios in comparison to industry standards to arrive at some valid conclusion. *Prima facie,* it appears that the reason for interest rate and tax liabilities being low could be the government patronage being enjoyed by the company

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or the financial jugglery to show higher RONW to investors with a view to underplay the average performance of the company thereby making it look more attractive to potential investors.

Another observation is that the profit margin had considerably declined in 1999 as compared to 2000. It could possibly be attributed to the general economic slowdown. However, one would be wise to observe the industry data before coming to any conclusion.

In the final analysis it is stated that the performance of the company seems to be average as its ROI is consistently below 10% levels. Low interest charge indicates subsidized loans and low average tax rate may be either due to foreign exchange earnings or the favorables policies of the Government.

5. Keeping in line with the success of free market economy it is felt that the Government should not exist as an owner in any business activity, leave alone SCI.

There are several models available to the government with respect to privatization. Athreya has proposed four models of privatization:

Government majority enterprise	The government sells a portion of the enterprise's equity, while retaining 51 percent or more with itself.
Government controlled enterprise	The government retains 26 to 49 percent of the enterprise's equity while disinvesting the balance.
Joint sector	The government keeps 26 percent of the equity, sells 25 percent to a private sector partner, and offers the balance 49 percent to the general investing public.
Private sector enterprise	The entire equity is transferred to non-governmental hands.

It is felt that entire equity of SCI should be transferred to non-Government investors and Government should cease all its controls in this company except the regulatory ones. The rationale of this suggestion is that private sector is already present in this sector and has considerable experience. There are routes of entry and exit already available in this sector providing enough scope of competition.

Part E: Caselets

Caselet 1

1. Employee Stock Ownership Plans (ESOPs) offer some ownership stake in the company to all/some employees with a motive to develop ownership attitudes and align shareholders' interests with that of the company. ESOPs can be in the form of Stock Option Plans, Phantom Equity Plans and Stock Purchase Plans.

There are many reasons why companies set-up ESOPs for their employees:

- It is a wonderful motivator and can get employees more involved in their duties and focused on corporate performance.
- It is an important means to attract and retain efficient employees, developing long-term relationships with them.
- As a compensation device, ESOPs offer rewards that can exceed the expectations of employees but still be affordable to the company as they are highly performance driven.
- ESOPs are used for providing retirement benefits to the employees and succession plan to owners.

2. This depends on various factors, including a company's specific situation, its goals for implementing the ESOP plan, its future expansion/diversification plans, the industry/sector of business (example, technology companies usually give a higher stake to employees) and many other factors.

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Companies have enough flexibility in deciding how much stake should be given through the ESOPs. Offerings under an ESOP should not be a one-time process. Frequent grants to both existing/new employees maintain the advantages of an ESOP.

Caselet 2

1. Due diligence refers to the investigations undertaken while transferring businesses/ business assets between companies. It is mostly often carried out during a merger or acquisitions process, but is also required while purchasing assets, especially the intangibles such as design rights or other intellectual property.

Due diligence is usually carried out by the acquirer (lawyers and accountants of acquirer) to ensure that the business or the business asset is truly owned by the seller (target company) and has the "value" which can be exploited. The acquirer requests the target to provide copies of all of its material contracts, tax returns and other important business documents. This enables the acquirer to find out whether there are legal, financial, or business problems with the target or satisfy itself that none exists.

2. Once the merger and acquisition transaction is over, almost all M&A transactions permit the acquirer to recover a portion of the purchase price paid if the target company misrepresented certain aspects of the transaction. The right of the acquirer to ask and to be repaid a part of the price in such circumstances, is known as the right to indemnification.

During the indemnification process, the acquirer usually has the right to bring claims against a target for a specified period of time. Examples of the acquirer's right to indemnification can result from:

- The target's written representations and warranties being erroneous or incomplete.
- The acquirer being required to shell out an unanticipated liability of the target (such as income or payroll taxes).
- The acquirer being needed to pay for environmental cleanup costs associated with a pre-closing activity of the target.

3. Confidentiality Agreement

Before a transaction, an acquirer often considers several potential targets, or a target firm may consider alternative acquirers. The target and acquirer usually share sensitive confidential information. It is vital to have a 'Confidentiality Agreement' signed before confidential information is shared between the parties to avoid disclosure to third parties or use by either party for competitive purposes. In addition, the Confidentiality Agreement sometimes includes provisions by which the parties agree not to hire each other's employees. Such a provision is indeed necessary for the target company to survive if the acquisition process fails.

Caselet 3

1. An acquirer is mainly concerned with the following:

- Boost the synergy
- Decrease the premium.

Synergy comes to the process only if two companies value more together than apart. Undoubtedly, the merger will be unsuccessful if the cost of acquisition exceeds the potential synergies. Premium is nothing but the excess of bid price over the market value of the target company. Various types of synergies are possible.

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Managerial Synergy

Screening the current management practices can bring in synergies to the system. The HLL has taken over TOMCO with the intention of achieving leadership in soaps and detergents business. To go ahead in this process, HLL sent its team to TOMCO one year prior to the merger to study the management practices of TOMCO. HLL ensured that the merger became a success by duplicating excellent management practices at TOMCO.

Exchange Inefficiency

Vertical integration will eliminate market transactions. Fall in total costs is reflected in gross margin.

In some cases, inefficient market transactions can be avoided. Characteristically, this takes place by vertical integration. Tata tea took over Consolidated Coffee Ltd. that produces coffee beans and also Asian Coffee Ltd., which processes the coffee beans. This backward integration reduced the exchange inefficiency by eliminating market transactions.

Operating Synergy

Economies of scale can often be generated. This will help in bringing down the costs.

India Cements, in a move to reach economies of scale and achieve leadership position in South India, acquired Raasi Cements, Visaka Cements and CCIs plant at Yerraguntla. The move was made at the time of a slump in the cement industry leading to very cheap acquisitions, the replacement cost being very high.

ICICI has showed a sense of timing in its takeover of ITC Classic when the NBFCs were facing a tough time and the parent ITC had sullied its image due to FERA violation. So, the acquisition came very cheap and ICICI had access to ITC Classic's distribution network in a short time-frame.

Financial Synergy

In some cases, cash/resources are channeled from unappealing to appealing industries and Return on Investment (ROI) are improved.

RPG's Ceat Tyres sold off its tyre cord division to SRF Ltd. in 1996 and also transferred its fiberglass division to FGP Ltd., another group company in order to achieve financial synergy.

Diversifying Risk

Unsystematic risk can be brought down by a company by carefully diversifying into areas that have good potential.

Torrent group, which identified power as one of its future businesses, acquired Ahmedabad Electric Company and Surat Electric Company in order to diversify the risk in its existing line of pharmaceuticals business.

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Model Question Paper II

Time: 6 Hours **Total Points: 200**

Paper I

Time: 3 Hours **Points: 100**

Part A: Basic Concepts (30 Points)

Answer all the questions. Each question carries one point.

1. A corporation seeking a controlling interest in another corporation invites the shareholders of the firm it is seeking to control to submit/tender their shares of stock in the firm for purchasing. Which activity the above statement is referring to?

a. Going private.

b. Exchange offer.

c. Tender offer.

d. Share repurchase.

e. None of the above.

2. Which of the following terms refers to a restructuring activity where an outside group seeks to obtain representation on the firm's Board of Directors?

a. Proxy contest.

b. Bear hug.

c. Tender offer.

d. Standstill agreement.

e. Leveraged Buy-out.

3. Managerial conglomerates carry the attributes of financial conglomerates still further by doing which of the following activities?

a. Taking financial responsibility and control.

b. Participating in operating decisions.

c. Providing staff expertise and staff services.

d. Only (b) and (c) above.

e. All of the above.

4. Which of the following formulae denotes the value of the firm with constant growth?

a. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$.

b. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g} \text{ x } \frac{(1+g_s)^{n+1}}{(1+k)^n}$.

c. $V_0 = \frac{X_0(1-T)(1-b)(1+g)}{k-g}$.

d. $V_0 = \frac{X_0(1-T)}{k}$.

e. $V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g}$.

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5. If the value of common stock is Rs.154, the dividend last declared is Rs.15 and the growth rate in return is 10%, what is the required rate of return or the cost of equity capital?

a. 18.76 %.

b. 19.02 %.

c. 20.71%.

d. 21.00 %.

e. 22.00%.

6. Investment decisions and their evaluation using capital budgeting analysis are important. Which of the following reasons justify/justifies this?

a. The consequence of the decision continues for a number of years.

b. The decisions require effective planning, like accurate sales forecast.

c. The investment decision involves substantial outlays.

d. Both (a) and (c) above.

e. All of the above.

7. X Ltd. is planning to acquire Y Ltd. and is ready to pay Rs.45 for each share of Y's common stock. The MPS of Y Ltd. is Rs.30. What is the purchase price premium?

a. 33.33%.

b. 50%.

c. 60%.

d. 66.67%.

e. Data insufficient.

8. "When the market value of the target firm stock does not reflect its true or potential value, mergers occur". Which of the following theories is the statement referring to?

a. Information.

b. Strategic alignment.

c. Free cash flow.

d. Undervaluation.

e. None of the above.

9. Which of the following is/are key factor(s) in the general statement of valuation?

a. Cash inflows.

b. Cost of capital.

c. Investment outlays.

d. Tax rate.

e. All of the above.

10. Which of the following is not an asset oriented approach in valuation?

a. Comparable company approach.

b. Adjusted book value approach.

c. Liquidation value approach.

d. Break-up value approach.

e. None of the above.

11. Which of the following theories suggests that post merger increases in financial leverage are due to under-leverage in the premerger period?

a. Increased debt capacity hypothesis.

b. Latent debt capacity hypothesis.

c. Managerial entrenchment hypothesis.

d. Harassment hypothesis.

e. None of the above.

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12. Which of the following is not a characteristic of a joint venture?

a. Contribution of partners to money, property, effort, knowledge, skill, or any other asset for a common undertaking.

b. Joint property interest in the subject matter of venture.

c. No right of control over the management.

d. Right to share in the profit.

e. None of the above.

13. Which of the following is not true about ESOP?

a. They are defined as contribution employee benefit pension plans.

b. They are stock bonus plans or combined stock bonus plan.

c. They are set-up to diversify investments widely for financial prudence.

d. They increase the tax benefits by using leverage.

e. None of the above.

14. A transaction in which, a division or a subsidiary of a public corporation is acquired from the parent company by a purchasing group led by an executive of the parent company or members of the unit's management is known in the LBO parlance as

a. Going private transaction

b. LBO

c. Unit MBO

d. Reverse LBO

e. None of the above.

15. Which of the following is a/are special factor(s) impacting international mergers more than domestic mergers?

i. Technology.

ii. Exchange rates.

iii. Differential labor costs.

iv. Tariff barriers.

a. Only (i) above.

b. Only (ii) above.

c. Both (ii) and (iii) above.

d. Both (ii) and (iv) above.

e. Only (i), (iii) and (iv) above.

16. The control mechanisms called upon at a particular instance depend on which of the following?

a. Ownership structure of the firm.

b. Composition of firm's board.

c. Availability of outside bidders.

d. Availability of dissidents.

e. All of the above.

17. Managerial capabilities do not include which of the following?

a. Competence in the general management functions like planning, directing, etc.

b. Specific management functions of research, personnel, etc.

c. Technological capabilities.

d. Co-ordination and achieving an effective organization system.

e. Organization of seminars and workshops for the lower management staff.

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18. Which of the following statements is/are false?

a. Proxy contest provides an alternative means to corporate control.

b. Proxy contests over the right to control decrease the likelihood that corporate assets will be transferred to higher valued assets.

c. Proxy contests perform an important and effective disciplinary role in the managerial labor market.

d. Both (a) and (c) above.

e. None of the above.

19. When atomistic shareholders reason that their decisions have no impact on the outcome of the tender offer and hence, abstain from tendering to free ride on the value increase resulting from the merger, causing the bid to fail it is called

24. Which of the following statements is/are true?

a. The price earnings multiple method involves valuing the firm based on its earnings of the first year after the explicit forecast period.

b. The price earnings multiple method uses earnings which are vulnerable to distortion.

c. Under the price earnings multiple method, the valuation process becomes inconsistent due to use of cash flows in valuing the firm in the explicit forecast period and the use of earnings thereafter.

d. Both (a) and (b) above.

e. All of (a), (b) and (c) above.

25. Which of the following statements is/are true regarding the replacement cost method of estimating continuing value?

a. It can be applied only to tangible assets.

b. Book values of assets being out of time with the current market prices (due to inflation) affect its utility.

c. The method fails if replacing the asset is uneconomical for the firm.

d. It is considered as a cash flow method as it considers the cash flow due to replacement of the asset.

e. Both (a) and (c) above.

26. Which of the following is an/are argument(s) against using the book value to determine the exchange ratio in a merger?

a. Book value is influenced by accounting policies which reflect subjective judgments.

b. Book values do not reflect changes in the purchasing power of money.

c. Book values often are highly different from true economic values.

d. Both (b) and (c) above.

e. All of (a), (b) and (c) above.

27. X Ltd. has a present value of Rs.1200 crore and Y Ltd. has a present value of Rs.700 crore. The present value of cost savings expected from the merger is Rs.120 crore. X Ltd. pays Rs.750 crore to acquire Y Ltd. The expenses incurred towards the merger are Rs.22 crore. The value of the synergy from the merger is

a. Rs.46 crore

b. Rs.48 crore

c. Rs.50 crore

d. Rs.52 crore

e. Rs.54 crore.

28. A merger of firms engaged at different stages of production in an industry is called

a. Horizontal Merger

b. Vertical Merger

c. Conglomerate Merger

d. Subsidiary Merger

e. Reverse Subsidiary Merger.

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29. Which among the following is/are true regarding share repurchase?

a. Repurchase of stock seems to be appropriate when a firm has excess cash and insufficient profitable investment opportunities to justify the use of these funds.

b. Share repurchase can also be used as a takeover defence to reduce the amount of floating stock which is available for a raider.

c. Share repurchase enables the management to increase its stake in the company without investing any additional funds.

d. Both (b) and (c) above.

e. All of (a), (b) and (c) above.

30. Which of the following best describes a poison pill strategy?

a. Existing bondholders can demand repayment if there is a change of control as a result of a hostile takeover.

b. Existing shareholders are issued rights which, if there is a significant purchase of shares by a bidder, can be used to purchase additional stock in the company at a bargain price.

c. Agreements that provide for payment of huge severance packages to the senior management executives in case of takeover of the firm.

d. Agreements that provide for payment of huge severance packages to the layers of management immediately below the top management levels.

e. Agreements that provide for payment of huge severance packages to all the full time employees of the firm.

Part B: Problems (50 Points)

Solve all the problems. Points are indicated against each problem.

1. ABC Ltd. is a company operating in the Software industry. It is considering the acquisition of XYZ with stock. The relevant financial information is as follows:

	ABC	XYZ
Present earnings (Rs.)	9,00,000	2,40,000
Number of O/S shares	1,50,000	60,000
P/E	14	10

ABC is planning to offer a premium of 25% over the market price of XYZ.

Estimate

a. The exchange ratio

b. The number of shares to be issued by ABC to the shareholders of XYZ

c. EPS of the new company after the merger

d. The market price of the share when P/E ratio remains at 14 times

e. The market price when P/E changes to 12 times.

Comment on your results.

(2 + 2 + 2 + 2 + 2 = 10 points)

2. Alpha limited is considering making a tender offer for Gama Ltd. The merger would realize economies of Rs.20 lakh. The relevant financial information for Gama Ltd. is as follows:

Number of shares outstanding Rs.2,00,000

Earnings per share Rs.12

Market price per share Rs.76

Alpha Limited intends to make a two-tier tender offer wherein it will offer Rs.85 for the first 1,00,000 shares and Rs.70 for the remaining shares.

a. If the tender is successful, how much should Alpha pay to Gama Ltd.?

b. How much are the shareholders of Alpha and Gama receiving from the economies?

c. Acting independently, what will each stockholder do to maximize his or her wealth?

d. What might the shareholders do if they could respond collectively as a cartel?

(5 + 3 + 1 + 1 = 10 points)

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3. Tetrapak Company Ltd. is operating in the cement industry and has a required rate of return of 14%. The net operating income of the company now is Rs.22 lakh and is expected to grow at a rate of 25% for 6 years. The ratio of investment to after tax net operating income is 0.15. (Assume that the firm is in the 36 % tax bracket).

Estimate the value of the firm if, the net operating income grows at 8 % per year after the period of supernormal growth.

(6 points)

4. The following information is available for Global Communications Ltd. for the year 20x0.

Outstanding debt	= Rs.967.00 cr.
Share price	= Rs.33 per share
No. of outstanding shares	= Rs.37.50 cr.
Net income	= Rs.8.60 cr.
EBIT	= Rs.122.50 cr.
Interest expense	= Rs.109.0625 cr.
Capital expenditure	= Rs.117.2 cr.
Depreciation	= Rs.117.2 cr.
Working capital	= Rs.22.00 cr.
Growth rate	= 8% (from 2001 to 2005)
Growth rate	= 6% (beyond 2005)
Free cash flow (year 20 x 5 onwards)	= Rs.120.168 cr.

The capital expenditure is expected to be equally offset by depreciation in future and the debt ratio of the company is expected to decline by 30% by 2005.

You are required to:

a. Compute the value of the firm.

b. Compute the value per share. Is the company under or overvalued?

(10 + 2 = 12 points)

5. The shares of Sachin Company Ltd. (SCL) are currently being traded for Rs.24 per share. The top management together with their families control 40% of the 10 lakh shares outstanding. Mongia Company Ltd. (MCL) wishes to acquire SCL because of likely synergies. The estimated present value of these synergies is Rs.80 lakh. Moreover, MCL feels that the management of SCL is overpaid. It feels that with better management motivation, lower salaries and fewer perks for the top management, approximately Rs.4 lakh of expenses per annum can be saved. This would add Rs.30 lakh in value to the acquisition.

The following additional information is available regarding MCL:

Earnings per share	Rs.4.00
Number of shares outstanding	15 lakh
Market price of shares	Rs.40.00

a. What is the maximum price per share which MCL can offer to pay for SCL?

b. What is the minimum price per share at which the management of SCL will be willing to give up their controlling interest?

c. Calculate the break even exchange ratio for the two companies if the EPS of SCL is Rs.3.00 and the expected P/E ratio of the merged entity is 9.00.

(4 + 4 + 4 = 12 points)

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Part C: Applied Theory (20 Points)

Answer the following questions. Points are indicated against each question.

1. The merger between ANZ Grindlay and Standard Chartered Bank can be sited as one of the largest international mergers in the banking industry. Explain the reasons for international mergers and acquisitions.

(10 points)

2. Compare and contrast merger vs. internal growth.

(10 points)

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Paper II

Time: 3 Hours **Points: 100**

Part D: Case Study (50 Points)

Read the case carefully and answer the following questions.

1. Assuming that the company decides to go ahead with the merger, compute the following.

a. The maximum exchange ratio acceptable to the shareholders of HCB Ltd. for a post-merger P/E of 10, 12, 18 and 24.

b. The minimum exchange ratio acceptable to the shareholders of SI Ltd. for the above post-merger P/E.

2. Graphically, illustrate the influence of P/E_{12} on gains and losses from the merger.

3. Calculate the NPV of HCB Ltd. for exchange ratios of 3.5, 4.0, 4.5 and 5.0. Assume cost of capital is 15%.

4. Apart from mergers, what are the other ways of corporate restructuring which HCB Ltd. can explore?

5. Corporate takeovers are increasingly assuming a hostile nature since 1980s. In this context, discuss 3 antitakeover defenses available to corporates.

(15 + 10 + 10 + 5 + 10 = 50 points)

HCB Ltd.

HCB Ltd. was incorporated as a private limited company on December 13, 1947 and converted into a public limited company on January 5, 1961. The shares of the company are listed on the Bombay and Calcutta Stock Exchanges. The company's shares are also traded on the National Stock Exchange. The company is engaged in the manufacture and sale of pharmaceuticals, consumer products, dyes and textile auxiliary products, agrochemicals and bio-technical products and trading in dyestuffs, textile chemicals, consumer products, additives, resins and pigments. It has foreign collaboration with CG Ltd., Switzerland (Technical & Financial) and UCV S.A. Belgium (Technical). The plants of the company are located at Bhandup (bulk drugs), Kandla (Capsules, Formulations, Cefamezin Vials and Formulations), Mazagaon (Textile Auxiliaries) and Santa Monica (Technical Materials, Organic Phosphates and Phosphites, Araldite, Bulk Drugs and Methyl Chloride). The company's salient financial statistics are given in Exhibit I.

Exhibit I: Capital History

Year	No. of Shares	
1986	92,62,500	shares of Rs.10 each
	46,31,250	bonus 1:2
1988	38,14,000	shares issues at a premium of Rs.4 per share
1995-96	88,53,875	bonus 1:2
	2,65,61,625	

Exhibit II: Financial Performance

(Rs. in crore)

	1996-97	1997-98	1998-99	1999-2000	2000-01
Sales	335.89	393.73	440.73	469.32	513.65
PBDIT	47.02	61.19	55.69	157.71	67.34
PAT	1.84	14.23	14.84	121.70	23.76
Dividend	24%	25%	28%	30%	37%
EPS	5.97	5.36	5.60	45.92	8.96
P/E Ratio	46.47	30.57	55.69	86.26	5.78

The Indian Pharmaceutical industry was witnessing a shakeout. Through a series of mergers and acquisitions, the industry was getting increasingly concentrated. In addition, the drug industry continued to depend on the whims and fancies of the government. The global scenario was also likely to see major restructuring exercises in the coming years. The formation of World Trade Organization and the increasing importance attached to intellectual property rights in general and

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product patents in particular held major threats to Indian pharmaceutical companies. The management of HCB Ltd., began to wonder whether the company had enough clout to undertake the necessary research to survive in the long run. HCB's corporate planning department had been advised to look for takeover targets. The idea was to increase market power and generate additional resources to withstand global competition in the coming years. An associated issue was the company's approach towards the non-pharmaceutical divisions. Currently, these divisions were contributing to approximately 25% of the company's turnover. The Chairman felt that HCB should concentrate more on its core pharmaceutical businesses. He had obtained information about SI Ltd., a Rs.234 crore pharmaceutical company (this is given in Exhibit III). For HCB Ltd., taking over such a large company could prove to be a make or break decision. The chairman decideded to rope in Ashok Banerjee, a qualified Chartered Financial Analyst as a consultant. Banerjee summarized his findings as indicated in Exhibit IV. An experienced M&A professional, Banerjee however felt that the information available was quite sketchy. He felt that to appreciate the strategic dimensions of the merger proposal better, a lot of additional information was needed.

Exhibit III

Financial Performance of SI Ltd. (2000-01)

Rs. in crore

Sales	234.20
PAT	14.66
Net worth	49.70
– Equity	7.95
– Reserves	41.75
Dividend	40%
EPS	18.40
P/E Rratio	23.18

Exhibit IV

a. The shareholders of SI Ltd. are willing to approve the merger proposed if the exchange ratio is satisfactory.

b. The expected post-tax cash flows from equity holder's point of view are given below:

Year	1	2	3	4	5
Pre-merger CFs	25.75	30.50	38.70	42.50	48.75
Post-merger CFs	60.75	78.50	95.70	109.50	125.50

Beyond 5 years, pre-merger cash flows are expected to grow at a compound rate of 6% per year whereas post-merger cash flows are expected to grow at a compound rate of 8% per year.

Part E: Caselets (50 Points)

Caselet 1

Read the caselet carefully and answer the following questions.

1. Why do companies go for restructuring?

(12 points)

2. How is external restructuring different from internal restructuring?

(5 points)

The Indian corporate industry has witnessed sea changes in the past few decades. Thanks to the government's policy of liberalization and globalization of the Indian economy. With reforms on, the dream of growing big in the competitive global markets is slowly, but certainly materializing. Restructuring has become the way of life for Indian corporates. Several big industrial houses and

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family managed businesses are moving towards restructuring their businesses for boosting profitability and increasing their competitiveness.

Starting with the opening of the economy, the much-needed thrust was provided in 1998, which was rightly named as the 'year of restructuring'. Throughout that year, most of the firms went ahead with mergers, acquisitions, sell-offs and spin-offs. A whopping sixty merger pacts were recorded in the year mostly comprising companies in the same promoter groups.

Caselet 2

Read the caselet carefully and answer the following questions.

1. In this context, briefly describe how the ESOPs will affect the Book Value of Share (BPS) of a company? How will an Indian company treat the difference between the exercise price and market price of the share issued under the ESOP plan?

(6 points)

2. Briefly describe the various substitutes for ESOP.

(12 points)

Companies usually fix certain performance parameters for their employees to be eligible for ESOPs. Performance of the employee during the past years, minimum service period, current and potential contribution of the employee to the success of the company – all these factors are considered while determining their eligibility for ESOPs.

Sometimes, companies may desire to offer immediate benefits to the employees, and in that case company may offer direct shares to employees instead of ESOPs. Shares can be offered at a discount or at market value. If offered at market price, the move aims at performance based future gains.

There is an alternate plan for ESOP called as Stock Appreciation Rights (SAR). Under this plan, every employee of the company just receives an amount equal to the appreciation in the stocks offered to him/her under ESOP without any shares actually changing hands. To cite an example, Procter and Gamble (P&G), offered all its employees in India 100 shares in P&G Worldwide under SAR at US$82.50 per share. Redemption date was fixed as 2003, and every employee will get US$100 for every increase of US $1 in share price. Hence, in 2003 if the share price reaches US$100, every employee will get rupee equivalent of US $1700.50 [(US$100-US$82.50)*100] per share.

Hence, there are many ways available to motivate the employees to stay with the company. The side effect is swelling in book value of shares of the company. Other substitutes are Employee Stock Purchase Plan, Employee Stock Ownership Plan, Employee Stock Purchase Scheme and Employee Stock Option Scheme.

Caselet 3

Read the caselet carefully and answer the following questions.

1. What can a company achieve through ESOPs and which kind of companies would normally think of setting up ESOPs?

(8 points)

2. What is the difference between Sweat Equity and ESOP?

(7 points)

With the Indian economy growing at an inspiring rate, MNCs have been setting up their operations in India. In an increasingly competitive and globalized market, creating value for shareholders, attracting and retaining talent, etc., have become more than buzzwords. In such a scenario, more and more corporate houses have found Employee Stock Options Plan (ESOP), Sweat Equity Plans (SEPs) etc., as indispensable tools to create overall wealth for their organizations. Under an ESOP,

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a company offers an employee the right to buy shares of the company, at a price for a certain number of years. The major goals of ESOP are retaining key employees, linking reward with performance and rewarding loyalty. It also helps in attracting scarce skills and is a substitute for cash incentives.

The Indian government also plays a key role in encouraging corporates to go for these creative ideas. For instance, recent Budget provisions/clarifications in this regard will encourage more IT companies to introduce ESOPs and Sweat Equity Schemes.

As per the provisions of recent budget, stock options will be taxed as a 'perquisite' at the time of exercise of the option by the employee. The difference between the market value of the stock and the cost at which it is being offered to the employee shall be the perquisite value (and not the entire value of the stock). When the employee sells the security, the difference between the sale consideration and cost of acquisition would be taxed under "capital gain".

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Model Question Paper II

Suggested Answers

Paper I

Part A: Basic Concepts

1. ***(c)*** In a tender offer a party, generally a corporation, seeking a controlling interest in another corporation asks the shareholders of the firm it is seeking to control to submit their shares of stock in the firm.

2. ***(a)*** In a proxy contest, outsiders who are generally referred to as dissidents or insurgents seek to reduce the control position of the incumbents or existing Board of Directors.

3. ***(e)*** Managerial conglomerates not only assume financial responsibility and control, but also play a role in operating decisions and provide staff expertise and staff services to the operating entities. By providing managerial counsel and interactions on decisions, managerial conglomerates increase the potential for improving performance.

4. ***(c)*** The value of the firm with constant growth is given by the formula

$$V_0 = \frac{X_0(1-T)(1-b)(1+g)}{k-g}$$

5. ***(c)*** As per the dividend growth model, the value of the equity of the firm is given as

$S_0 = D_1/(k e - g)$

Where D_1	=	Dividend for the present year
	=	D_0 (1+g)
S_0	=	Value of the common stock
g	=	Growth rate in dividends
154	=	15 (1 + 0.1)/(k_e – 0.1)
k_e	=	20.71%.

6. ***(e)*** All the given alternatives are reasons which make the investment decisions and their evaluation using the capital budgeting analysis important for the firm.

7. ***(b)*** Purchase price premium

= Offer price of the target/Target company's MPS

= 45/30 = 1.5 or 50%.

8. ***(d)*** The undervaluation theory states that mergers occur when the market value of the target firm stock is less than replacement value or the management is not operating up to its potential.

9. ***(e)*** All the given factors are key factors in the general statement of valuation.

10. ***(a)*** Comparable company approach is a market based approach which utilizes the market based price to earnings, sales, or book value to compare substantially similar companies.

11. ***(b)*** The latent debt capacity theory suggests that post-merger increases in financial leverage are due to under-leverage in the pre-merger period.

12. ***(c)*** As per the contract law, the participants of a joint venture have the right of mutual control or management of the enterprise.

13. ***(c)*** A general pension fund is expected to diversify its investments widely for financial prudence, whereas the ESOP is set-up to invest in the securities of the sponsoring company. All the other options are true.

14. ***(c)*** In a unit management buyout, a division or a subsidiary of a public corporation is acquired from the parent company by a purchasing group led by an executive of the parent company or members of the unit's management.

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15. ***(d)*** Tariff barriers and exchange rate relationships are special factors impacting international mergers more than domestic. Operating within a tariff barrier may be the only means of obtaining competitive access to a large market. Exchange rates are also an important influence.

16. ***(e)*** The control mechanisms called upon by a firm depend on all the given alternatives as the managerial ownership and control on voting rights could provide managers with an effective shield against competition from alternative management teams.

17. ***(e)*** Managerial capabilities include co-coordinating the organization system apart from the general management and specific management functions. Further, they include a range of technological capabilities.

18. ***(b)*** Proxy contests are attempts by dissident groups of shareholders to obtain board representation. Proxy contests over the right to control increase the likelihood that corporate assets will be transferred to higher valued uses.

19. ***(a)*** In a firm held by a large number of shareholders, spread far and wide, it makes no sense for a small shareholder to spend on monitoring the performance of its management. In other words, they simply "free-ride" on the efforts made by other big shareholders in monitoring the performance of the management and share the benefits resulting from it. In the financial parlance, this phenomenon is known as 'Free Rider Problem'.

20. ***(e)*** Greenmail refers to the payment of a substantial premium for a significant shareholder's stock in return for the stockholder's agreement that he or she will not initiate a bid to control the company. It does not involve any change in the charter.

21. ***(b)*** Under a flip over plan, shareholders receive a common stock dividend in the form of rights to acquire the firm's common or preferred stock at an exercise price well above the current market price, and if the merger occurs, the rights "flip over" to permit the holder to purchase the acquirer's shares at a substantial discount.

22. ***(e)*** Voting plan is a poison pill antitakeover defense plan which issues the voting preferred stock to target firm shareholders. At a trigger point, preferred stockholders (other than the bidder for target) become entitled to super voting privileges, making it difficult for the bidder to obtain voting control.

23. ***(c)*** Shark watching is a relatively new service offered by proxy solicitation firms, who for a fee detect and identify early accumulations of stock. This gives some more time to tailor a defense against the particular purchaser.

24. ***(e)*** P/E multiple relates the market value of the firm to the current earnings after tax.

25. ***(e)*** Replacement cost method is applicable only when the replacement possibility is present. In case of intangible assets, it is very difficult to get the replacement value as it depends on subjective factors also and no substitutes are available for these types of assets.

26. ***(e)*** The exchange ratio in merger determined by market value reflects a better picture.

27. ***(b)*** Value of synergy = PVxy – (PVx + Pvy) – P – E

PVxy = 1,200 + 700 + 120 = 2,020.

Value of synergy = 2,020 – (1,200 + 700) – 50 – 22 = Rs. 48 cr.

28. ***(b)*** Vertical mergers internalize transactions to achieve cost efficiencies.

29. ***(e)*** All the given alternatives are benefits obtained from a share repurchase and are true.

30. ***(b)*** Poison pill strategy involves issue of new securities, which can be converted to equity at a low price in the event of a hostile takeover of the firm.

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Part B: Problems

1. a. Estimation of market price per share

Earnings per share

= Earnings/Number of shares

	ABC	XYZ
EPS	9,00,000/1,50,000 = 6	2,40,000/60,000 = 4
P/E	14	10
MPS = EPS x P/E	6 x 14 = 84	4 x 10 = 40

Offer to shareholders of XYZ (including premium) = 40 x 1.25 = 50

Exchange ratio = 50/84 = 0.596 or 0.6 approximately.

b. Number of shares issued to the shareholders of XYZ = 60,000 x 0.6 = 36,000

c. Earnings per share = Total Earnings/Number of shares

Total earnings = 9,00,000 + 2,40,000 = Rs.11,40,000

Number of shares = 1,50,000 + 36,000 = 1,86,000

Earnings per share = 11,40,000/1,86,000 = Rs.6.129 or Rs.6.13 approximately.

There is an increase in EPS by virtue of acquiring a company with a lower price/earnings ratio.

d. MPS = EPS x P/E

When P/E remains at 14 MPS

= 6.13 x 14 = Rs.85.82.

e. When P/E changes to 12 MPS

= 6.13 x 12 = Rs.73.56

When the P/E remains at 14 share price rises from Rs.84 to Rs.85.82, due to an increase in EPS. When the P/E changes to 12 the share price falls due to the decline in P/E ratio. In efficient markets, there may be some decline in P/E ratio if there was no likelihood of synergy and/or improved management.

2. a. When the tender is successful,

Amount to be paid by Alpha for the first 1,00,000 shares = 1,00,000 x 85 = Rs.85,00,000

Amount to be paid by Alpha for the last 1,00,000 shares = 1,00,000 x 70 = Rs.70,00,000

Total amount to be paid to shareholders of Gama = Rs.1,55,00,000

Total value of stock to Gama

= 2,00,000 x 76 = Rs.1,52,00,000

Therefore, the shareholders of Gama receive 1,55,00,000–1,52, 00,000 = Rs.3,00,000.

Economies due to merger = Rs.20,00,000.

b. Therefore, shareholders of Gama receive a lesser part of the economies i.e., Rs.3,00,000 and shareholder of Alpha Ltd. have the greater part which is

20,00,000 – 3,00,000 = Rs.17,00,000.

c. With a two-tier offer, there is a great incentive for individual stockholders to tender early, thereby ensuring success for the acquiring firm.

d. Collectively, Gama stockholders would be better off holding out for a larger fraction of the total value of the economies. They can do this if they act as a cartel in response to the offer.

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3. Here, Tetrapak Company Ltd. is growing at 25% per annum for 6 years and at 8% per annum thereafter.

Valuation of a Firm with supernormal growth followed by constant growth is given as

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g} x \frac{(1+g_s)^{n+1}}{(1+k)^n}$$

$$V_0 = 22{,}00{,}000(1-0.36)(1-0.15)\sum_{t=1}^{6}\frac{(1+0.25)^t}{(1+0.14)^t} +$$

$$\frac{22{,}00{,}000(1-0.36)(1-0.15)}{0.14-0.08} x \frac{(1+0.25)^{6+1}}{(1+0.14)^6}$$

= 11,96,800 x 1.0965 [(1.0965)6 – 1/ 0.0965] + 1,99,46,666.67 x 2.172

= 1,00,36,079 + 43,32,416 = Rs.1,43,68,495.

4. a. Assumptions

- Assumed that Cost of equity is 16%.
- Assumed that 30% debt repayment is done in the year 2003

i. Computations for tax rate:

EBIT 2000	=	Rs.122.5 cr.
Interest	=	Rs.109.0625 cr.
PBT	=	Rs.13.4375 cr.
PAT	=	Rs.8.60 cr.
∴ Tax paid	=	Rs.4.8375 cr.

$$\therefore \text{ Tax rate } = \frac{4.8375}{13.4375} = 36\%.$$

ii. Computation for increase in working capital

Working capital (2000) = Rs.22.0 cr.

Increase in 2001 = 22 x 0.08 = 1.76 cr.

It will continue to increase @ 8% per annum.

iii. Weighted Average Cost of Capital

Present debt = Rs.967 cr.

$$\text{Interest cost } = \frac{109.0625}{967} x\ 100 = 11.28\%$$

Equity capital = 37.5 x 33 = 1237.5 cr.

$$\therefore Kc = \frac{1237.5}{967+1237.5} x\ 16 + \frac{967}{967+1237.5} x\ 11.28\ (1-0.36)$$

= 8.9816 + 3.1667 = 12.15%.

iv. As capital expenditure and the depreciation are equal, they will not influence the free cash flows of the company.

v. Computation of free cash flows up to 2003.

Year	2001	2002	2003	2004	2005
EBIT (I – T)	84.672	91.445	98.761	106.662	115.195
Increase in working capital	1.76	1.901	2.053	2.217	2.394
Debt repayment	–	–	–	–	0.3x967= 290.1
Free cash flows	82.912	89.545	96.71	104.445	– 177.3
Present value of FCF (discounted @12.15% per annum)	73.93	71.19	68.56	66.02	–99.93

∴ Present value of FCFs up to 2003

= Rs.179.76 cr.

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vi. Cost of capital beyond 2003

Debt = 0.7 x 967 = 676.9

Equity = 1,237.5 cr.

$$K'c = \frac{1237.5}{676.9+1237.5} \text{ x } 16 + \frac{676.9}{676.9+1237.5} \text{ x } 11.28 \text{ x } (1-0.36)$$

= 10.342 + 2.552 = 12.894%.

vii. Continuing value

$$= \left(\frac{119.57}{0.12894-0.06}\right)\left(\frac{1}{1.1215}\right)^5 = 977.15 \text{ cr.}$$

∴ Value of the firm = PV of FCF up to 2005 + Continuing value – MV of outstanding debt = 179.76 + 977.51 – 676.9 = 480.37 cr.

b. Value per share = $\frac{480.37}{37.5}$ = Rs.12.81.

∴ The share price is overvalued in the market place.

5. a.

(Amount in Rs.)

PV of company 10,00,000 x 24	=	240,00,000
Synergy gain	=	80,00,000
Salary and Perk gain	=	30,00,000
Maximum total value	=	3,50,00,000

∴ Maximum share price = $\frac{3,50,00,000}{10,00,000}$ = Rs.35 per share

b. Share value of Sachin (top management)

= 4,00,000 x 24 = 96,00,000

Value of giving up salaries and perks

= 30,00,000

= 1,26,00,000

Minimum price per share they will accept = $\frac{1,26,00,000}{4,00,000}$ = Rs.31.50

The actual exchange price (cash compensation) should hence, be between Rs.31.50 to Rs.35 per share, which is a tight range. Perhaps a bid of Rs.32 or Rs.33 per share would be sufficient inducement for the top management of Sachin Company to sell, but it offers very little scope for value criterion to Mongia Company.

c. $$ER_1 = \frac{-S_1}{S_2} + \frac{(E_1+E_2)\,PE_{12}}{P_1S_2} = \frac{-15,00,000}{10,00,000} +$$

$$\frac{(30,00,000+60,00,000) \text{ x } 9}{40 \text{ x } 10,00,000} = -1.5 + 2.025 = 0.525$$

$$ER_2 = \frac{P_2\,S_1}{PE_{12}\,(E_1+E_2) - P_2S_2} = \frac{20 \text{ x } 15,00,000}{9 \text{ x } 90,00,000 - 24 \text{ x } 10,00,000} = 0.526.$$

Part C: Applied Theory

1. The various motives for international mergers and acquisitions include the following:

I. **Growth**

To achieve long-run strategic goals.

For growth beyond the capacity of saturated domestic market – the company's domestic markets may be saturated, or the domestic economy may be simply too small to accommodate the growth of its corporate giants.

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Market extension abroad and protection of market share at home.

Size and economies of scale required for effective global competition – leading firms in the domestic market might have lower costs because of economies of scale. Expansion overseas by medium-sized firms may enable them to attain the size necessary to improve their ability to complete.

II. **Technology**

To exploit the technological knowledge advantage – a technologically superior firm may make acquisitions abroad in order to exploit its technological advantage.

To acquire technology where it is lacking – a technologically inferior firm may acquire a foreign target with superior technology in order to enhance its competitive position, both at home and abroad.

III. **Extend Advantages in Differentiated Products**

Strong correlation exists between multi nationalization and product differentiation (Caves, 1982). This may indicate an application of the parent's (acquirer's) good reputation. A firm having a reputation for superior products in the domestic market may find acceptance for the products in foreign markets as well.

IV. **Government Policy**

To circumvent protective tariffs, quotas, etc. – exports are particularly vulnerable to tariffs and quotas erected to protect domestic industries. Threat of such restrictions can encourage international mergers, especially when the market to be protected is large.

To reduce dependence on exports.

V. **Exchange Rates**

Impact on relative costs of foreign versus domestic acquisitions.

Impact on value of repatriated profits.

Foreign exchange rates impact international mergers in several ways. The relative strength or weakness of the domestic versus foreign currency can impact the effective price paid for an acquisition, its financing, production costs of running the acquired firm, and the value of repatriated profits to the parent.

VI. **Political and Economic Stability**

To invest in a safe, predictable environment – political and/or economic instability can greatly increase the risk of what is already a risky situation. Political stability may range from a situation of outright war to the other extreme, with all variations in between. Acquiring firms must consider the frequency with which the governments change, orderliness in transfer of power, differences in government policies from one administration to the next, including the degree of differences between dominant political parties. Desirable economic factors include low, or at least predictable, inflation. Labor relations and stability of exchange rates are other important considerations in economic stability.

VII. **Differential Labor Costs, Productivity of Labor**

Labor relations have an affect on the attractiveness of the economic environment. Labor climate has a clear impact on the costs of production. High labor costs and declining productivity of labor serve as entry barriers.

VIII. **To Follow Clients (Especially by Banks)**

The importance of long-term banking relationships is a major factor in international mergers in the banking industry. If several of the bank's clients move abroad, it makes economic sense for the bank to expand abroad as well.

IX. **Diversification**

By product line

Geographically

To reduce systematic risk.

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International mergers enable diversification both geographically, and to a lesser extent by product line. International conglomerate mergers are relatively rare because firms are reluctant to add the risk of operating in a new product market to the risks of operating in a new geographic environment. Product diversification takes place by both forward and backward vertical integration.

Also, international merging reduces the earnings risk inherent in being dependent on the health of a single domestic economy. Thus, international mergers reduce systematic as well as non-systematic risk.

X. **Resource-Poor Domestic Economy**

To obtain assured sources of supply – acquiring firms from resource-poor domestic economies use mergers as a means to circumvent barriers to import or export raw materials.

2. Internal growth and mergers are not mutually exclusive activities. Indeed, they are mutually supportive and reinforcing. Growing successful firms use many forms of M&As and restructuring based on opportunities and limitations. The characteristics and competitive structure of an industry will influence the strategies employed.

The factors and circumstances favoring M&As in part relate to industry characteristics. With excess capacity in an industry, horizontal mergers can be used to shut down some high-cost plants to reduce industry supply and to increase efficiency in the remaining firms. Also, a number of industries, formerly fragmented into many small-scale operations, have been rolled up into larger firms. The larger firms have been able to achieve efficiencies not achieved by the separate units. An example is the series of consolidation mergers in the waste management industry.

Some other advantages of M&As or external growth may also be noted. An acquisition enables the acquirer to obtain an organization already in place with an historical track record. Some surprises are still possible, but they can be mitigated to some degree by due diligence. An acquisition generally involves paying a premium, but the cost of acquiring a company may be determined in advance.

An acquisition may also represent obtaining of a segment – divested from another firm. The logic is that the segment can be managed better when added to the activities of the buying firm. Another important reason for M&As is to enhance the strength and breadth of the acquiring firm. For example, the phenomenal growth of Cisco Systems was achieved by acquisitions of companies with the technology and talent to expand capabilities.

Firms generally have internal development programs that are assisted by M&A activity. The existing capabilities of a firm influence the kinds of acquisition activity that will make business and economic sense. For example, in the years 1981-97, the General Electric Company made 509 acquisitions of $53 billion and made 310 divestitures of $16 billion. The central strategy was to seek to become the number one or two players in the product-market area of the strategic business unit. If unit managers were unable to achieve a leading position in the product-market area, the segment was divested.

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Paper II

Part D: Case Study

1. a. The maximum exchange ratio acceptable to the shareholders of HCB Ltd. for a post merger P/E of 10, 12, 18 and 24.

Relevant information for firms HCB Ltd. and SI Ltd.

	HCB Ltd.	SI Ltd.
Total earnings E	23.76 crore	14.66 crore
No. of outstanding shares S	2.66 crore	0.795 crore
Earnings Per Share EPS	Rs.8.96	Rs.18.40
Price Earnings ratio PE	5.78	23.18
Market price per share P	51.79	426.51

The maximum exchange ratio acceptable can be derived from the formula.

$ER_1 = -S_1/S_2 + (E_1 + E_2)PE_{12}/P_1S_2$

Where,

ER = Exchange ratio
P = Price per share
S_1 = Number of outstanding shares of Indian Soaps Ltd.
S_2 = Number of outstanding shares of Best Soaps Ltd.
PE_{12} = Price earning multiple of the merged entity

Plugging the data given into the equation, we get

$ER_1 = -2.66/0.795 + ((23.76 + 14.66)/(51.79 \times 0.795))PE_{12}$
$= -3.346 + 0.933PE_{12}$

The maximum exchange ratio acceptable to the shareholders of HCB Ltd. for the given PE multiples are as follows:

PE_{12}	10.00	12.00	18.00	24.00
Maximum ER_1	5.98	7.85	13.45	19.05

b. The minimum exchange ratio acceptable to the shareholders of SI Ltd. for the above post-merger PE

$ER_2 = P_2S_1/[(PE_{12})(E_1 + E_2) - P_2S_2]$

$ER_2 = 426.51(2.66)/[PE_{12}(38.42) - (426.51 \times 0.795)]$

$= 1134.5166/[38.42PE_{12} - 339.075]$

For the given PE multiples minimum exchange ratio acceptable will be

PE_{12}	10.00	12.00	18.00	24.0
Minimum ER_2	25.14	9.30	3.22	1.95

2. Graphically illustrate the influence of PE_{12} on gains and losses from the merger.

PE_{12}	MAX ER_1	MIN ER_2
10.00	5.98	25.14
12.00	7.85	9.30
18.00	13.45	3.22
24.00	19.05	1.95

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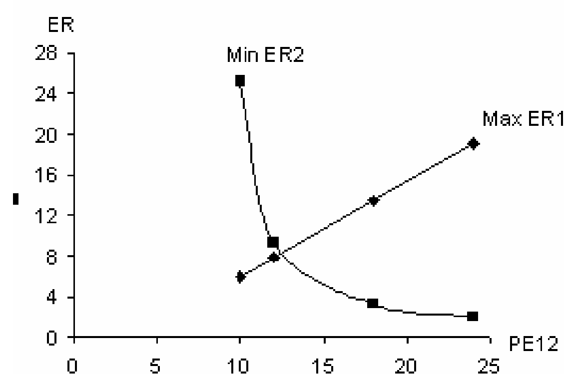

3. Calculation of the NPV of HCB Ltd. for exchange ratios of 3.5, 4.0, 4.5, and 5. Cost of capital is 15%.

Year	Pre-merger cash flow Rs. cr.	Post-merger cash flow Rs. cr.	Discounted Cash flows @ 15%	
			Pre-merger	Post-merger
1	25.750	60.750	22.390	52.830
2	30.500	78.500	23.060	59.360
3	38.700	95.700	25.450	62.920
4	42.500	109.500	24.300	62.610
5	48.750	125.500	24.240	62.400
beyond 5	574.170	1936.290	285.460	962.680
			404.900	1262.790
Exchange Ratio	3.500	4.000	4.500	5.000
Ownership position for different exchange ratios	0.489	0.455	0.426	0.401
NPV = $OP_X PVX_1 - PV_X$	212.280	170.207	133.620	101.360

4. Other methods of corporate restructuring which HCB Ltd. can explore are:

Divestitures

Spin-offs and split ups

Joint ventures.

5. Some of the common antitakeover defences are:

i. **Share Repurchases:** This involves the firm buying back its own shares from the public. This is a sound strategy and has a two-fold impact. Firstly, the amount of floating stock which is available for a raider is reduced. Secondly, the management is able to increase its stake in the company without investing any additional funds. For example, if the paid-up capital of the company comprises of 1 crore shares and the current promoters' holding is 24 lakh shares, then the promoters' stake is 24%. Suppose the company were to buy-back 40 lakh shares from the market, (the existing management does not participate in the buy-back), the management's stake in the firm increases to 40% in the post-buy-back capital.

ii. **White Knights:** White Knight strategy involves selecting a "lesser evil". White knight defence is effected when a firm is a target of a hostile tender offer. The target firm may invite another firm, called as the white knight, to make a counter offer for its share. The white knight may bid for the shares of the target at a price equal to greater than the hostile tender offer. Generally, the white knight is a firm which is friendly to the existing management. In some cases, the white knight may retain the existing management even after acquiring a controlling stake.

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iii. **Poison Pills:** Poison Pills as a defence tool was invented by the famous M&A attorney Marty Lipton (nicknamed as the Dean of takeover defence) to defend El Paso Electric from General American Oil in 1982 and Lenox from Brown Foreman in 1983. The poison pill strategy involved issuing new securities which would be convertible into equity at a low price in the event of a hostile takeover of the firm. Such conversion would severely dilute the equity capital of the firm.

The first generation poison pills had their drawbacks. This is because analysts in the United States treat preferred stock as fixed income security and add outstanding preference capital to long-term debt in computing the leverage of the firm. This makes the firm appear highly leveraged and hence more risky in the eyes of the investors. This drawback led to the invention of the second generation poison pill in the form of flip over rights plan. In a typical flip over plan, rights certificates were issued to the equity holders as dividends. The rights certificates were in the nature of a call option on the shares of the merged firm (firm resulting from the merger of the target and the predator) on the occuring of a specific event. The triggering event could be the acquisition of a certain quantum of shares (say 25% of the outstanding shares) or in the event of a hostile tender offer, for the shares of the firm. Flip over provisions were considered to be a powerful defence tool until they were rendered ineffective by Sir James Goldsmith.

Generally, predators want to acquire 100% of the target firm as it gives them an unrestricted access to the target's resources. The flip over poison pills are effective only if the predator intends to acquire 100% of the target firm and merge it with itself. However, they are ineffective in preventing the acquisition of controlling stake without acquiring 100% of the target firm. The drawbacks of the flip over plans led to the invention of the third generation poison pills in the form of flip-in plans. Flip-in provisions are similar to the flip over plans except that they allow the holders of the rights to acquire its shares (i.e., the target company) as against the shares of the predator company after its merger. The flip-in provisions are designed to dilute the equity capital of the target. This would make the acquisition more expensive irrespective of whether the target firm is merged with the acquiring firm.

Part E: Caselets

Caselet 1

1. Companies adopt restructuring exercises for the following reasons:

- To domestically and globally increase competitive strength.
- Restructure of debt equity to reduce high interest obligations
- To cope up with the funds constraints or utilization of excess funds
- To reduce time and cost overruns
- To downsize and reduce the number of organizational layers to increase the operational efficiency
- Growth and entry into new markets
- Corporate tax benefits
- Automatic approval for FDI in companies
- New industrial licensing policy or government policy decisions
- To enhance shareholders' value or to improve the share price of the company
- To achieve economies of scale
- To arrest the ill effects of unwanted diversification committed earlier
- To underutilize excess capacities or to achieve operational efficiency

2. External restructuring involves changes in a firm's asset mix through mergers and acquisitions, divestitures, divisional buyouts, and spin-offs. Internal restructuring involves changes in a firm's value chain, organizational design, governance structure, and compensation policies.

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Caselet 2

1. Since the shares are issued at very cheap price, book value of existing shares gets affected. As per the guidelines specified by SEBI, a company can debit the difference between exercise price and market price of the share to the Profit & Loss Account.

2. Various substitutes for ESOP are as follows:

Employee Stock Purchase Plan

Here, the employee allows the employer to withhold a certain portion of his monthly salary, the accumulated amount of which is utilized to acquire shares at a discounted value or otherwise at a future date.

Employee Stock Ownership Plan

Under this plan, an employee of the company is given the option to acquire shares of the company at a pre-determined price after a certain period, directly or indirectly through a trust.

Employee Stock Purchase Scheme

Under this scheme, the company offers shares to an employee, as part of a public issue or otherwise at a predetermined price.

Employees Stock Option Scheme

Under the Employee Stock Option Scheme, a company grants option to its employees to buy a specified number of shares at a specified price during a specified period.

Stock Appreciation Plans

The employees are awarded stock equivalents at a certain pre-determined value, and after a certain minimum stipulated period, the employees are allowed to encash such rights.

Caselet 3

1. The major aim of ESOPs is to boost corporate performance on a continuous basis. This is achieved by vesting a part of ownership in the hands of employees, who in turn put efforts to increase efficiency and productivity. Since better market prices (a reflection of sound earnings) offer more benefit to employees, this plan is quite useful for companies who opt to increase their earnings and thereby the market price of the scrip, at cheaper costs. This in-turn benefits the company in the following ways:

- Create Shareholder Wealth (for employees, owners and other shareholders)
- Goal Congruence (Alignment of company and employees goals will increase performance and generate more wealth.)
- Less Turnover of Employees thereby reducing the training expenses.
- Attract Talents – Since, the benefits of ESOP are theoretically infinite, this acts as an incentive to the best talent to give its best.

2. Sweat Equity and ESOP are similar only to the extent that both are normally given to employees. However, Sweat Equity is offered to persons having contributed intangible assets to the company, whereas ESOP is meant for employees at large.

Sweat Equity is reward linked, whereas ESOP aims at developing a sense of belonging and motivating the employees. Normally, Sweat Equity is offered in large portions to form significant stake in the organization, whereas ESOPs constitute a small percentage of the company's equity.

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Model Question Paper III

Time: 6 Hours **Total Points: 200**

Paper I

Time: 3 Hours **Points: 100**

Part A: Basic Concepts (30 Points)

Answer all the questions. Each question carries one point.

1. Which of the following terms refers to a restructuring activity where a corporation buys back some portion of its outstanding shares of common stock?

a. Tender offer.
b. Premium buy-back.
c. Exchange offer.
d. Going private.
e. Share repurchase.

2. Conglomerate mergers involve mergers between firms engaged in

a. Same kind of business activity
b. Different stages of production operations
c. Unrelated type of business activity
d. Related type of business activity
e. None of the above.

3. The declining stage of the industry life cycle is associated with which of the following types of mergers?

i. Vertical mergers.
ii. Horizontal mergers.
iii. Conglomerate mergers.
iv. Concentric mergers.

a. Both (i) and (ii) above.
b. Both (i) and (iii) above.
c. Only (i), (ii) and (iii) above.
d. Both (iii) and (iv) above.
e. All of the above.

4. Which of the following valuation methods involves the estimation of market value of the assets and liabilities of the firm as a going concern?

a. Asset oriented approach.
b. Comparable company approach.
c. Adjusted book value approach.
d. Replacement cost approach.
e. Discounted cash flow approach.

5. A firm receives Rs.80,000 every year for eight years if it invests Rs.2,50,000 now. The cost of capital for the project is 12%. What is the net present value of the project?

a. Rs.3,97,440.
b. Rs.1,47,440.
c. Rs.1,76,240.
d. Rs.2,20,000.
e. Rs.1,33,920.

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6. Which of the following equations justifies the going forward for a merger proposal?

a. NAV = $[V_{AB} – (V_A + V_B)]$.

b. NAV = $V_{AB} – (P + E)$.

c. NAV = $[V_{AB} – (V_A + V_B)] – (P + E)$.

d. NAV = $(V_A + V_B) – (P + E)$.

e. None of the above.

7. Free cash flow means

a. Cash flow in excess of the amounts required to fund all projects that have positive net present values when discounted at the applicable costs of capital

b. Cash inflow of the firm

c. Cash outflow of the firm

d. Excess of Cash inflow over the cash outflow

e. None of the above.

8. Which of the following is/are true regarding agency costs?

a. Agency costs are costs of structuring a set of contracts.

b. They are costs of monitoring and controlling the behavior of agents by principals.

c. They are costs of bonding to guarantee that agents will make optimal decisions.

d. They are the residual loss, that is, the welfare loss experienced by principals.

e. All of the above.

9. Which of the following is not a motive behind vertical merger?

a. Technological economy.

b. Reduction in the costs.

c. Efficient information flow.

d. Diversification.

e. None of the above.

10. Which of the following is not an explanation and rationale for gains to sell off?

a. Managerial efficiency.

b. Tax and regulatory factors.

c. Decreased market spanning.

d. Changing economic environment.

e. More focused merger.

11. Which of the following rating descriptions of Moody's relates to junk bonds?

a. Aa2.

b. Aaa.

c. Ba3.

d. Baa3.

e. Aa1.

12. Which of the following are reasons for failure of joint ventures?

i. Adequate preplanning.

ii. Inability of parent companies to share control or compromise on difficult issues.

iii. Refusal to share knowledge with counterparts.

iv. Development of required technology.

a. Both (ii) and (iv) above.

b. Both (ii) and (iii) above.

c. Both (i) and (iv) above.

d. Both (i) and (iii) above.

e. All of the above.

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13. Which of the following is/are false about ESOPs as a financing tool?

a. They bring additional debt capacity to highly leveraged firms.

b. They provide a market for equity financing for closely held firms.

c. They cannot be used for transferring ownership.

d. Both (a) and (b) above.

e. None of the above.

14. In which of the following firms do Leveraged Buyouts occur?

i. In firms or industries where managers are vulnerable to expropriation.

ii. In firms where assets are im-plastic to allow greater borrowing to finance buyouts.

iii. In mature firms with limited growth opportunities and stable cash flows.

a. Only (i) above.

b. Only (ii) above.

c. Both (ii) and (iii) above.

d. Both (i) and (ii) above.

e. All of the above.

15. Which of the following restructuring activities involves changing the capital structure of the firm?

a. Standstill agreements.

b. Share repurchases.

c. Proxy contests.

d. Antitakeover activities.

e. Split off.

16. Which of the following terms describes a contractual arrangement where stockholders retain cash flow rights to their shares while giving the right to vote those shares to another entity?

a. Standstill agreement.

b. Supermajority voting rights.

c. Voting plan.

d. Voting trust.

e. Proxy contests.

17. Which of the following statements is not true?

a. In the market for corporate control, managers or team of managers compete for the right to manage corporate resources.

b. The market for corporate control operates within the firm and outside the firm.

c. Transfer of control between management teams is accomplished only through internal control devices typified by the Board of Directors.

d. The control mechanism called upon at a particular instance depends on the ownership structure of the firm.

e. None of the above.

18. Providing opportunities for the carry-over of specific management capabilities is the feature of

a. Product Extension Merger

b. Market Extension Merger

c. Pure Conglomerate Merger

d. Vertical Merger

e. Both (a) and (b) above.

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19. Which of the following models explored the implications of an increase in the holdings of the large shareholders?

a. HT Model.

b. Shleifer and Vishny Model.

c. Jegadeesh and Chowdhry Model.

d. Fishman Model.

e. Hansen Model.

20. Actions to be taken by the target to make itself less attractive to the acquiring firm and which may also leave the target weak are called

a. Corporate Charter Amendments

b. Greenmail

c. Scorched Earth Defenses

d. Poison Pill Defense

e. Financial Defensive Measures.

21. Which of the following terms refers to a third party friendly to the incumbent management brought in to rescue the seller from an undesired takeover?

a. White Squire.

b. White Knight.

c. Shark Repellant.

d. Shark Watcher.

e. Poison Pill.

22. Asset and ownership restructuring represents which kind of takeover defensive measure?

a. Coercive offers and defensive measure.

b. Financial defensive measure.

c. Antitakeover amendments.

d. Poison pill defense.

e. None of the above.

23. Which of the following terms refers to amendments which restrict a company's freedom to buy-back shares at a premium?

a. Reincorporation.

b. Super majority amendments.

c. Fair price amendments.

d. Classified boards.

e. Anti-greenmail amendment.

24. Which of the following is an external device for controlling agency costs?

a. Separation of management and control.

b. Market for corporate control.

c. Management compensation contracts.

d. Both (a) and (b) above.

e. All of (a), (b) and (c) above.

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25. United Company's equity has a dividend yield of 4%, dividend per share of Rs.2 and the company has 10 million shares outstanding. If its market value to book value ratio is 1.5, then the total book value of equity is

a. Rs.200 million
b. Rs.250 million
c. Rs.300 million
d. Rs.333 million
e. Cannot be determined from the given data.

26. A combination where all the firms lose their identity is known as

a. Merger
b. Takeover
c. Asset Purchase
d. Consolidation
e. Both (a) and (d) above.

27. Which of the following statements is/are true?

a. A buyout consummated mainly with debt is called a leveraged buyout.
b. In a spin-off, a company is broken up into two or more independent companies.
c. An enterprise in which the government holds more than 51% is called a government controlled enterprise.
d. A company formed by the merger of two companies splitting up once again into two companies is called reverse merger.
e. Both (a) and (c) above.

28. Which of the following best describes a greenmail transaction?

a. It is a form of targeted share repurchase.
b. Under this strategy, the target company buys out shareholders threatening a takeover at a price which exceeds the market price.
c. The target company buys out shareholders threatening a takeover at the market price.
d. Both (a) and (b) above.
e. Both (a) and (c) above.

29. M Ltd., has a value of Rs.30 million, while N Ltd.,, has a value of 10 million. If the two firms merge, cost savings with a present value of Rs.8 million would occur. M Ltd., proposes to offer Rs.11 million cash compensation to acquire N Ltd., The net present value of the merger to M Ltd., and N Ltd., will be

a. Rs.6 million, Rs.1 million
b. Rs.7 million, Rs.1 million
c. Rs.8 million, Rs.1 million
d. Rs.8 million, Rs.2 million
e. Rs.10 million, Rs.2 million.

30. Which of the following is false regarding an equity carve out?

a. An equity carve out involves conversion of an existing division or unit into a wholly owned subsidiary.
b. Equity carve outs result in a positive cash flow to the parent company.
c. The parent company always retains its controlling stake in the new entity.
d. Equity carve outs require higher levels of disclosure and are expensive to implement.
e. The shares of the wholly owned subsidiary that is formed are listed and traded separately on the stock exchange.

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Part B: Problems (50 Points)

Solve all the problems. Points are indicated against each problem.

1. SS Ltd. is investigating the possible acquisition of LP Ltd. The following data is available.

	SS Ltd.	LP Ltd.
Earnings per share	8	2
Dividend per share	4	0.8
Number of shares	1,00,000	60,000
Stock price	Rs.100	Rs.20

Investors currently estimate a steady growth of about 6 percent in LP Ltd.'s earnings and dividends. Under the new management, this growth rate would be increased to 8 percent per year, without any additional capital investment required.

a. What is the gain from the acquisition?

b. What is the cost of the acquisition if SS Ltd. pays Rs.30 in cash for each share of LP Ltd.?

c. What is the cost of the acquisition if SS offers one share of SS Ltd. for every two shares of LP Ltd.?

d. How do the cost of the cash offer and the share offer alter if the expected growth rate of LP were not changed by the merger?

(4 + 2 + 2 + 4 = 12 points)

2. The following information is given about two companies, ABC and XYZ.

(Amount in Rs.)

	ABC	XYZ	Merged firm
Earnings per share	2	2.5	2.67
Market price per share	20	12.5	?
P/E ratio	10	5	?
Number of shares	50,000	1,00,000	?
Total earnings	1,00,000	2,50,000	?
Total market value	10,00,000	12,50,000	?

ABC is planning to merge with XYZ. There are no gains from merging. In exchange for XYZ shares, ABC enterprise would issue just enough of its shares to ensure its Rs.2.67 earnings per share.

a. Complete the above table for the merged firm.

b. How many shares of ABC are to be exchanged for each share of XYZ?

c. What would be the cost of the merger to ABC?

d. What is the change in the total market value of ABC shares that were outstanding before the merger?

(4 + 2 + 2 + 1 = 9 points)

3. Universal India Ltd. is interested in acquiring the chemical division of Global Regional Company.

The following data is available for Global Regional Company.

The growth rate in assets, investments and profit after tax will be 15% for the first 4 years, 12% for the next 3 years and 8 % thereafter.

The ratio of profit after tax to the net assets is 0.12. The opportunity cost of capital for the proposed project is 10%. The firm's assets stand at Rs.65 lakh. The firm will earn profits (after taxes) to the extent of Rs.10 lakh. The initial investment in the project was Rs.8 lakh.

Estimate the value of acquisition.

(9 points)

4. Shah & Co. is considering going private by adopting the management buyout way. The management presently owns 23 percent of the 30 lakh shares outstanding. Market price per share is Rs.25. The management feels that a 40 percent premium over the shares' present

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price will attract public shareholders to tender their shares in a cash offer. The management plans to retain its shares and to obtain senior debt equal to 70 percent of the funds necessary to carry out the buyout. Junior subordinated debentures would supplement the remaining 30 percent of the funds.

Terms of the Debts

Senior debt: Interest rate is 2 percent above the prime rate, with principal reductions of 20 percent of the initial loan at the end of each of the next 5 years.

Junior subordinated debentures: It will bear a 13 percent interest rate with the retirement at the end of 6th year with a single balloon payment. The debentures have warrants attached that enable the holders to purchase 30 percent of the stock at the end of year 6.

Management estimates that the earnings before interest and taxes will be Rs.200 lakh. The company is not to pay any taxes over the next 5 yrs owing to the tax-losses being carried forward. The capital expenditure by the company equals its depreciation.

a. Show the feasibility of the buyout if the prime rate is expected to average 10 percent over the next 5 years.

b. Is it still feasible if the prime rate is expected to average 7 percent?

c. What minimal EBIT is required to service the debt?

(5 + 4 + 1 =10 points)

5. Beta Products Ltd., is planning to acquire Unique Products Ltd., in order to expand its own installed capacity. The company will then be in a position to cater to the increasing demand for its products and services. The equity related cash flows of Beta Products Ltd. before and after the merger are given below:

(Rs. lakh)

Year	1	2	3	4	5
Cash flows before acquisition	13.6	16.2	18.9	22.6	25.1
Cash flows after acquisition	20.9	26.3	30.9	38.6	46.2

The cash flows are expected to grow at the rate of 6% beyond year 5 whether Unique Products Ltd. is acquired or not. The other relevant data relating to the two companies is given below:

Company	Beta Products	Unique Products
Number of outstanding shares	210 lakh	100 lakh
Market price (Rs.)	31.00	23.00
Book value (Rs.)	28.00	20.50

Calculate the maximum exchange ratio that the management of Beta Products Ltd. can offer to the shareholders of Unique Products Ltd. so that the present value of its equity related cash flows after the merger is at least 20% more than the existing level. The cost of equity may be assumed to be 18%.

(10 points)

Part C: Applied Theory (20 Points)

Answer the following questions. Points are indicated against each question.

1. The process of divestiture represents significant, strategic and critical corporate understanding. Discuss the process and technique involved in a divestiture.

(10 points)

2. Leverage buyouts are another means of going private, and have become an increasingly frequent form of corporate restructuring. What is leveraged buyout? Discuss the elements involved in the process.

(10 points)

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Paper II

Time: 3 Hours **Points: 100**

Part D: Case Study (50 Points)

Read the case carefully and answer the following questions.

1. Project the cash flows of Xymex Limited for the next five years under the assumptions made in Lumex's Managements.
2. What is the price Lumex should pay for acquiring Xymex Limited?
3. In case Lumex wishes to acquire Xymex Limited through exchange of shares, what is the appropriate exchange ratio and what will be the impact on EPS of Lumex Limited immediately after the acquisition?
4. How should the acquisition be financed by Lumex – by paying cash or through exchange of shares? Justify your answer.
5. Identify the motives of Lumex's management for acquiring Xymex Limited. Is the move of Lumex's management justified? Comment. Clearly state the assumptions made.

(12 + 8 + 10 + 10 + 10 = 50 points)

Lumex Limited, a Chennai based firm was set-up in the year 1965 by Mr. K. Subramaniam. In the initial stages, the company was involved in importing industrial equipment for core industries. The company later started manufacturing equipment for the cement industry. However, owing to the cyclical nature of the cement industry, the firm has diversified into areas like textile and garments industries.

Over the years, the company has seen an increase in its net worth from Rs.10 lakh to Rs.4,812 lakh in 2000. The profits of the company have been fluctuating over the past few years and currently the profit after tax stands at Rs.427.05 lakh.

Concerned about the decline in growth of the company, Lumex Ltd. is considering acquisition as an alternative to increase its earnings and growth rate.

The company has chalked out a plan for acquisition after taking into account certain factors.

a. The target company should be in a related field
b. It should be well known in its area of operations
c. It should be smaller in size than Lumex Ltd.
d. It should have a wide range of products in growth markets.
e. Its earnings should be fairly stable.

After giving due weightage to all these factors, Lumex Limited has zeroed in on Xymex Limited. Although small in size, Xymex Limited, which is in a related field as Lumex, is well known for its quality products. It caters to the requirements of various industries such as cement, sugar, brewery, textile, fertilizer, etc. It also has a wide distribution network. However, the financial performance of the company has not been up to the mark because of bad management. The sales growth rate of 5% per annum has been dismal when compared to the industry average of 8% per annum. The main reason for this can be attributed to frequent lockouts and closures because of labor problems. The share market has reacted to this accordingly. This can be seen from the market price of its share which stands at Rs.25, much lower than its book value. The financials of the company are provided in tables 3 and 4 below.

Lumex Limited feels that it can definitely bring about a positive change in Xymex Limited. Its management feels that the sales growth rate of Xymex can be improved to 8% i.e., the industry average. It is also felt that the cost of goods sold can be decreased to 64% of sales and selling and administrative expenses to 14% of sales. A capital expenditure of 6% of sales every year is also anticipated by the acquirer. Depreciation is increasing at 6% p.a.

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Summarized profit and loss statement and per share data of Lumex Limited

(Rs. in lakh)

Year	1996	1997	1998	1999	2000
Net Sales	6200.00	7150.00	7800.00	8123.00	8750.00
Cost of goods sold % of sales	4464.00	5220.00	5655.00	5849.00	6475.00
Depreciation	150.00	166.00	185.00	192.00	203.00
Selling and administration expenses	705.00	735.00	935.00	1115.00	1130.00
Total expenses	5319.00	6120.50	6775.00	7155.56	7808.00
PBIT	881.00	1029.50	1025.00	967.44	942.00
Interest	145.00	156.00	178.00	256.00	285.00
PBT	736.00	873.50	847.00	711.44	657.00
Tax	257.60	305.73	296.45	249.00	229.95
PAT	478.40	567.78	550.55	462.44	427.05
Per Share Data					
EPS	2.53	3.00	2.91	2.44	2.26
DPS	1.20	1.25	1.25	1.50	1.80
Book Value	24.15	24.53	24.75	25.12	25.43
Market Value					
High	62.26	65.32	68.85	71.25	76.3
Low	31.20	32.85	33.65	36.75	39.50
Average	46.73	49.085	51.25	54.00	57.90
P/E ratio:					
High	24.62	21.77	23.66	29.15	33.80
Low	12.34	10.95	11.56	15.04	17.50
Average	18.48	16.36	17.61	22.09	25.65

Balance Sheet as on March 31, 2000 of Lumex Ltd.

(Rs. in lakh)

Source of Funds		
Shareholders' Funds	1892	
(Paid-up capital 1,89,20,000 shares)		
Reserves and Surplus	2920	4812
Borrowed Funds:		
Secured	1250	
Unsecured	983	2233
Capital Employed		7045
Uses of Funds:		
Gross Block	6875	
Less: Depreciation	1840	
Net Block	5035	
Investment	35	5070
Current Assets	3900	
Less: Current Liabilities	1925	
Net Current Assets		1975
Net Assets		7045

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Summarized profit and loss statement and per share data of Xymex Ltd.

(Rs. in lakh)

Year	1996	1997	1998	1999	2000
Net Sales	1750.00	1811.25	1975.89	2053.35	2145.75
Cost of goods sold % of sales	1207.50	1231.65	1383.12	1457.88	1544.94
Depreciation	43.00	47.00	51.00	55.00	59.00
Selling and administration expenses	300.00	315.00	318.00	325.00	345.00
Total expenses	1550.50	1593.65	1752.12	1837.88	1948.94
PBIT	199.50	217.60	223.77	215.47	196.81
Interest	25.00	28.00	30.00	32.00	34.00
PBT	174.50	189.60	193.77	183.47	162.81
Tax	59.85	66.36	66.85	64.21	56.98
PAT	114.65	123.24	126.92	119.26	105.83
Per Share Data					
EPS	3.82	4.11	4.23	3.67	3.26
DPS	1.60	1.50	1.60	1.50	1.80
Book Value	27.58	28.00	28.56	28.95	29.16
Market Value					
High	33.00	48.00	42.15	39.20	35.85
Low	25.36	28.95	22.15	20.30	15.85
Average	29.18	38.475	32.15	29.75	25.85
P/E ratio:					
High	8.63	11.68	9.96	10.68	11.01
Low	6.64	7.05	5.24	5.53	4.87
Average	7.64	9.37	7.60	8.11	7.94

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Balance Sheet as on March 31, 2000 of Xymex Limited

(Rs. in lakh)

Source of Funds		
Shareholders' Funds	300	
(Paid-up capital 30,00,000 shares)		
Reserves and Surplus	575	875
Borrowed Funds:		
Secured	160	
Unsecured	104	264
Capital Employed		1139
Uses of Funds		
Gross Block	940	
Less: Depreciation	350	
Net Block	590	
Investment	30	620
Current Assets	744	
Less: Current Liabilities	225	
Net Current Assets		519
Net Assets		1139

Part E: Caselets (50 Points)

Caslet 1

Read the caselet carefully and answer the following question.

1. Against the following backdrop, briefly discuss the motives of corporates behind international mergers and acquisition.

(14 points)

The Videocon group is buying out its Italian partner's 16% stake in Necchi Compressori, its Italy-based compressors' joint venture. The company will be purchasing the G Beccaria family's whole stake for around Rs.350 million. The company has received clearance from the RBI to invest money abroad. Following the deal, Necchi Compressori will become a fully-owned subsidiary of Videocon International. Videocon internationally holds 84% in the venture that supplies compressors (almost 5 million annually) for Videocon-branded refrigerators and air-conditioners in India.

With the change in the pattern of shareholding, Necchi Compressori will be renamed Videocon Compressori. The acquisition will enable Videocon to enhance its leverage on the European market for its whole consumer durables range. Necchi has been supplying compressors to Videocon International's Indian subsidiary Applicomp (India).

Videocon International purchased a 50 percent stake in Necchi in 1996. Afterwards, it increased its stake to 84 percent. Since then, the latter has been supplying five million compressors for refrigerators made by Videocon International in India.

Caselet 2

Read the caselet carefully and answer the following questions.

1. Discuss the various techniques used by companies to value the target company and estimate the bid price.

(17 points)

2. Why is the acquisition being paid for with stocks attractive to Procter and Gamble?

(5 points)

3. What is the general impact on the stock prices of the acquiring firm after the acquisition?

(5 points)

Procter and Gamble (P&G) will sell off Jif Peanut Butter and Crisco shortening to J.M. Smucker Co., bringing together the largest maker of jelly and the largest brand of peanut butter in the US market. Smucker will now enjoy the highest market share in jelly, peanut butter, and cooking oils.

The price for this dominant market share is valued at US $810 million. The acquisition will be paid wholly with stock that was a major attractive factor in the deal to P&G. Shareholders of P&G will be offered with 1 Smucker share for 50 P&G shares they own. To ease off the transaction, P&G will first spin off Jif and Crisco to its shareholders. Once the spin-off is through, Smucker would straight away complete its purchase of Jif and Crisco.

In a move to concentrate on its global brands, P&G has been looking to rid itself of food brands after having had marketing problems and modest sales growth. Smucker has been interested in Jif for twenty-five years and believes that the increased awareness of peanut butter's nutritional value will be positives. P&G included Crisco as part of the deal in order to rid itself of that line. Though not a striking part of the deal as cooking oils and shortening solids have lost popularity, Smucker believed Crisco still had potential as the leading brand.

When the public announcement was made, shares of both firms reacted at NYSE. P&G shares recorded a rise of 80 cents; Smucker shares rose by US $5.26.

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Caselet 3

Read the caselet carefully and answer the following questions.

1. What is a Leveraged Buyout (LBO)?

(5 points)

2. What is the meaning of the term "Special Purpose Vehicle (SPV)"?

(4 points)

With a reserve of just about Rs.400 crore in its balance sheet, it could not have been possible for Tata Tea to go for such mammoth acquisition of Tetley Co. on its own. Or, even bringing such a huge debt upon its own books could have put tremendous pressure on the bottom lines. So, it went for a Leveraged Buyout (LBO).

The deal has been designed in such a way that although Tata Tea keeps full control over the venture, the debt portion of the contract does not influence its balance sheet. The deal has been tied up through a Leveraged Buyout (LBO) based on Tetley's assets so that Tata Tea's gearing is not adversely affected.

Tata Tea has formed a Special Purpose Vehicle (SPV) – named as Tata Tea (Great Britain) – to acquire all the assets of Tetley. The initiative of the SPV, basically, is to ensure that Tata Tea's balance sheet does not suffer from extra funding costs, while at the same time, enabling it to benefit from the acquisition of the international brand.

The SPV has been capitalized at 70 million pounds out of which Tata Tea has put in 60 million pounds; this comprises 45 million pounds raised recently through its GDR issue. The US subsidiary of the company, Tata Tea Incorporated, has put in the rest 10 million pounds. The SPV has leveraged the 70 million pounds equity capital to raise a debt of 235 million pounds (3.358 times of the equity) to fund the deal. The whole debt amount of 235 million pounds includes 4 tranches whose maturities vary from 7 to 9.5 years, with a coupon of around 11 percent, 424 basis points over the London Interbank Offered Rate (LIBOR). Of this amount, the Netherlands-based Rabobank has provided 215 million pounds while venture capital funds, Mezzanine and Schroders, each have financed 10 million pounds.

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Model Question Paper III

Suggested Answers

Paper I

Part A: Basic Concepts

1. *(e)* When a corporation buys back some fraction of its outstanding shares of common stock it is called share repurchase.

2. *(c)* A combination of firms in an unrelated business activity is called a conglomerate. It is a combination which is neither vertical nor horizontal.

3. *(e)* In the declining stage, horizontal mergers are undertaken to ensure company survival whereas vertical mergers are carried out to increase efficiency and profit margins. Concentric mergers are undertaken to obtain opportunities for synergy and carrying over of managerial capabilities. Conglomerate acquisitions of firms in growth industries are undertaken to utilize the accumulated cash position of mature firms in declining industries.

4. *(c)* The adjusted book value approach to valuation involves estimation of the market value of the assets and liabilities of the firm as a going concern.

5. *(b)* $NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^t} - I_0$

$$NPV = \sum_{t=1}^{8} \frac{80,000}{(1+.12)^8} - 2,50,000$$

NPV = [80,000 x PVIFA $_{(12\%, 8yrs)}$] – 2,50,000

= 80,000 x 4.968 – 2,50,000

= 3,97,440 – 2,50,000

= Rs.1,47,440.

6. *(c)* The equation NAV = [V_{AB} – (V_A + V_B)] – (P +E) implies that the Net Acquisition Value of the combined firm is positive. Here, the synergistic effect of the combined firm is greater than the sum of P+E to justify going forward with the merger.

7. *(a)* Free cash flow is the cash flow in excess of the amounts required to fund all projects that have positive net present values when discounted at the applicable cost of capital. Michael Jensen introduced the free cash flow hypothesis. According to him distribution of free cash flow to shareholders increases the share price.

8. *(e)* The agency costs include (i) The costs of structuring the contracts between the managers and owners (ii) Costs of monitoring and controlling the behavior of the agents by the principal (iii) Costs of bond to guarantee that the agents will make optimal decisions or the principals will be compensated for the outcome of suboptimal decisions, and (iv) Loss experienced by the principal due to the divergence between the agents decision and the decision to maximize principals' interests.

9. *(d)* Vertical mergers occur between firms in different stages of the production operation and do not involve diversification of firms to different businesses.

10. *(c)* Spin-offs increase the number of securities for a given number of possible states of the world. In addition, the opportunity set with respect to investment and financial policies of the parent and its divisions will be expanded. Hence, spin-offs do not decrease but increase market spanning.

11. *(d)* Junk bonds are high yield bonds either rated below the investment grade or left unrated. The Moody's rate junk bonds at Baa3.

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12. *(b)* Adequate preplanning and development of required technology will lead to the success of the joint venture and not its failure.

13. *(c)* ESOPs are very useful devices for transferring ownership. They are used to buy-back shares, private companies, in divestiture activities, or to save failing companies, etc.

14. *(e)* A Leveraged Buyout is a purchase of a company by a small group of investors, financed largely by debt. The firms under the given conditions are more vulnerable to a Leveraged Buyout.

15. *(b)* Share repurchase generally deals with cash offers for outstanding shares of common stock. Hence, it has the effect of changing the capital structure of a firm.

16. *(d)* Voting trust is a device used by shareholders to retain cash flow rights to their shares while giving the right to vote those shares to another entity.

17. *(c)* Transfer of control between management teams is accomplished not only through internal control devices typified by the Board of Directors but also through external control mechanisms such as proxy contests, hostile takeovers, etc.

18. *(e)* Product extension and market extension mergers usually feature the opportunities for the carry-over of specific management capabilities such as research, applications engineering, production, marketing and so on.

19. *(b)* Shleifer and Vishny model looks into the implications of large shareholders. It says that as the proportion of the large shareholders of the firm increases, the likelihood of the firm being taken over increases as well.

20. *(c)* Scorched earth defenses are actions to make the target less attractive to the acquiring firm and which may also leave the target in weakened condition. Example: Sale of best segments or incurring high levels of debt to pay a large dividend or to engage in substantial share repurchase.

21. *(b)* White knight is a more acceptable merger partner sought out by the target of a hostile bidder.

22. *(b)* Asset and ownership restructuring involves adjustments in the assets and ownership structure to make a firm unattractive to a possible acquirer. Hence, it is a financial takeover defensive measure.

23. *(e)* Anti-greenmail amendments are corporate charter amendments which prohibit targeted share repurchases at a premium from an unwanted acquirer without the approval of non-participating shareholders.

24. *(b)* Agency costs should be minimized for the benefit of both shareholders and lenders. The market of corporate control is an external device used to control agency costs, whereas separation of management and control and management compensation contracts are interval devices.

25. *(d)* {(2 x 10 million)/.04} x 1/1.5 = 333 million.

26. *(d)* Consolidation is caused by the fusion of two or more firms, resulting in the formation of a new firm.

27. *(a)* In case of Leveraged Buyout, cash for acquisition is financed through debt financing. Sometimes, for the purpose of acquisition companies issue junk bonds.

28. *(d)* Greenmail refers to the repurchase of a block of shares from specific shareholders at a substantial premium to prevent a hostile tender offer on the company.

29. *(b)* NPV to M = (30 + 10 + 8) – 11 – 30 = Rs.7mn.

NPV to N = 11 – 10 = Rs.1mn.

30. *(c)* The parent company may or may not retain its controlling stake in the new entity.

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Part B: Problems

1. a. The perpetual growth model of stock valuation should be used to find the appropriate discount rate (r) for the common stock of LP Ltd.

0.80/r – 0.06 = 20

r = 10 %

Under the new management, the value of the combination would be the value of SS Ltd., before the merger (because the value of SS is unchanged by the merger) plus the value of LP after the merger, or

PVAB = (1,00,000) (100) + 60,000 [0.8/(0.10 – 0.08)]

PVAB = 100,00,000 + 24,00,000 = Rs.124,00,000

Now we calculate the gain from the acquisition

Gain = PVAB – (PVA + PVB)

= 124,00,000 – (100,00,000 + 12,00,000) = Rs.12,00,000.

b. Because this is a cash acquisition

Cost = Cash – PV_B

= 30 (60,000) – 12,00,000 = 18,00,000 – 12,00,000 = Rs.6,00,000.

c. When the merger is financed with stock, the affect of the merger in the stock price of SS Ltd., is to be taken into consideration. After the merger, there will be 1,30,000 shares i.e., 1,00,000 shares of SS + 30,000 shares to the shareholders of LP Ltd.

Hence, the share price will be

= 124,00,000/1,30,000 = Rs.95.38

Cost = (95.38) (30,000) – 12,00,000

= 28,61,400 – 12,00,000 = Rs.16,61,400.

d. If the acquisition is for cash, the cost is the same as was calculated in (b) in the above problem.

Cost = Rs. 6,00,000

If the acquisition is for stock, the cost is different from what was calculated in (c) in the previous problem. This is because the new growth rate affects the value of the merged company, which in turn affects the stock price of the merged company and hence, the cost of the merger.

PVAB = (100) (1,00,000) + 20 (60,000) = Rs.112,00,000

and the new share price will be

112,00,000/1,30,000 = Rs.86.15

Cost = 86.15 (30,000) – 20(60,000) = 25,84,500 – 1,20,000

= Rs.13,84,500.

2. a. We complete the table, beginning with

Total market value = 10,00,000 + 12,50,000 = Rs.22,50,000

Total earning = 1,00,000 + 2,50,000 = Rs.3,50,000

Earnings per share = 2.67 implies that the number of outstanding shares

= 3,50,000/2.67 = 1,31,086

The market price per share

= 22,50,000/1,31,086 = Rs.17.16

P/E ratio =17.16/2.67 = 6.42.

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	ABC	XYZ	Merged Firm
Earnings per share	2	2.5	2.67
Price per share	20	12.5	17.6
P/E ratio	10	5	6.42
Number of shares	50,000	1,00,000	1,31,086
Total earnings	1,00,000	2,50,000	3,50,000
Total market value	10,00,000	12,50,000	22,50,000

b. Number of shares exchanged for each share of XYZ.

ABC issued 81,086 i.e., (1,31,086 – 50,000) new shares in order to takeover XYZ which has 1,00,000 shares outstanding. Thus, 0.81 i.e., (81,086/1,00,000) shares of ABC were exchanged for each share of XYZ.

c. ABC paid a total of Rs.13,91,436 i.e., (81,086 x 17.16) for something that was worth Rs.12,50,000.

Thus, the cost is

13,91,436 – 12,50,000 = Rs.1,41,436.

d. The change in market value will be a drop of Rs.1,472,000. (i.e., {20 – 17.6} x 50,000)

3. (Rs. in lakh)

Year	Asset	Net Investment	PAT	Free Cash Flow	Present Value
0	65	8	10	2	2
1	74.75	9.2	11.5	2.3	2.09
2	85.96	10.58	13.23	2.65	2.186
3	98.85	12.17	15.21	3.04	2.286
4	113.68	13.99	17.49	3.5	2.39
5	127.33	15.67	19.59	3.92	2.427
6	142.61	17.55	21.94	4.39	2.477
7	159.72	19.65	24.57	4.92	2.565
8	172.49	21.22	26.54	5.32	2.476

Present value of free cash flow = Rs.16.897 lakh

Terminal value = 5.31/(0.10 – 0.08)

= 5.31/0.02 = Rs.265.5 lakh

Present value of terminal value = 265.5/(1.1)8

= Rs.123.83 lakh

Value of acquisition = 16.897 + 123.83 = Rs.140.727 lakh.

4. a. Shares owned by outsiders 30,00,000 x 0.77 = 23,10,000

Price to be offered 25 x 1.40 = Rs.35 per share

Total buyout amount 23,10,000 x 35 = Rs.8,08,50,000

Senior debt	8,08,50,000 x 0.7	Rs.5,65,95,000
Senior debt principal	5,65,95,000/5	Rs.1,13,19,000
Junior subordinated debenture	8,08,50,000 x 0.3	Rs.2,42,55,000

Annual EBIT to Service Debt

Senior debt interest	= 5,65,95,000 x 0.12 =	Rs.67,91,400
Senior debt principal		Rs.1,13,19,000
Junior debt interest	= 2,42,55,000 x 0.13 =	Rs.31,53,150
		Rs.2,12,63,550

Hence, during the first 5 years, EBIT of Rs.200 lakh will not be sufficient to service the debt.

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b. When the prime rate is averaged to 7 percent:

Senior debt interest	= 5,65,95,000 x 0.09 =	Rs.50,93,550
Senior debt principal		Rs.1,13,19,000
Junior debt interest	= 2,42,55,000 x 0.13 =	Rs.31,53,150
		Rs.1,95,65,700

The expected EBIT of Rs.200 lakh would be sufficient to service the debt at a lower prime rate of 7 percent.

c. The minimal EBIT required to service the debt at 10 percent prime rate will be Rs.2,12,63,550

5. The value of the company under both the cases is calculated as follows.

Year		1	2	3	4	5
Cash flows	Before Merger	13.6	16.2	18.9	22.6	25.10
	After Merger	20.9	26.3	30.9	38.6	46.20
Continuing value	Before Merger	–	–	–	–	221.72
	After Merger	–	–	–	–	408.10
Present value factor		0.8474	0.7182	0.6086	0.5158	0.4371
Present value of CFS & Con. value	Before Merger	11.525	11.6345	11.503	11.6568	10.971 + 96.914 =107.885
	After Merger	17.71	18.8882	18.8066	19.9098	20.194 + 178.38 = 198.574

∴ PV of cash flows of Beta Products Ltd. is

i. Before Merger = 11.525 + 11.6345 + 11.503 + 11.6568 + 107.89 = Rs.154.21 lakh.

ii. After Merger = 17.71 + 18.8882 + 18.8066 + 19.9054 + 198.57 = Rs.273.88 lakh.

The desired present value of the cash flows to the management of Beta Products Ltd.

= 154.21 x 1.2 = Rs.185.052 lakh

Ownership position of Beta Products Ltd.

$$\frac{185.052}{273.88} = 0.6757$$

$$\therefore \text{ OP} = \frac{N_B}{N_B + ER\ N_U}$$

$$0.6757 = \frac{210}{210 + ER \times 100}$$

$$\therefore \text{ ER} = \left(\frac{210}{0.6757} - 210\right)/100 = 1.0079 \approx 1.$$

Part C: Applied Theory

1. Similar to the decision to acquire a business, the decision to divest represents a very significant and strategic action and a critical corporate undertaking. Fundamental decisions about the future strategic direction of the corporation lead to acquisitions and divestitures. For an emerging, growth-oriented corporation, the acquisition or divestiture of a business may prove to be the single most critical event in deciding the future success or failure of the enterprise. While acquisitions are almost always glamorous and exciting corporate events, divestitures, in contrast, take place usually in a much more subdued environment.

   Acquisitions are accompanied by a sense of accomplishment and positive corporate visibility along with great expectations of future growth, profits and size. Though these expectations are not always realized, everyone in the corporation wants to be a part of the triumph, and few corporate resources are spared in assuring the professional management and staffing of the transaction.

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Divestitures, on the other hand, are activities which a few in the corporation wish to be associated with. Its primary objective tends to be consummation of the transaction as quickly as possible. This attitudinal difference between the manner of handling acquisitions and divestitures is not usually understood by the management, directors, and stockholders of the corporation. These transactions must be professionally managed and supported in the corporation with the same type and level of commitment given to acquisitions, in order to maximize the benefits or minimize the losses associated with them. Like acquisitions, divestitures too are not normal business transactions, and require not only professional management but also specialized functional skills and experienced negotiating capabilities. A dedicated team possessing all these skills should be created, and where necessary, should be supplemented with outside professional advisers.

A successful divestiture involves the following steps:

- Assembling the divestiture team
- Preparing the divestiture
- Valuing the business
- The selling process.

2. The transformation of a public corporation into a privately held firm is also referred to as "going private". Leveraged Buyout (LBO) is another means of going private, and has become an increasingly frequent form of corporate restructuring.

An LBO is defined as the acquisition, primarily financed by borrowing, of all the stock, or assets, of a hitherto or till then public company by a small group of investors. In the stock purchase format, the stock and all interests of the target shareholders in the target corporation is sold to the buying group and then the two firms may be merged. In the asset-purchase format, the assets of the target corporation are sold to the buying group. The target corporation, which is now only a pool of cash with no tangible assets, is still owned by the original shareholders. Sometimes, management is the prime moving force and such LBOs are called Management Buyouts (MBOs).

Although limited in number, LBOs are considered to have certain beneficial effects. Companies that undergo an LBO appear to be more diversified than their peers. Companies tend to divest business units and narrow the scope of their activities after the LBO, thereby undoing excessive diversification of the past. Further, there is evidence to prove that the productivity of a company increases after an LBO due to selling off of its non-performing or poorly performing business units and simplifying of its management structure in order to reduce bureaucracy.

Elements of a Typical LBO Operation

A typical LBO operation consists of the following four stages:

Raising of Cash Required for the Buyout and Devising a Management Incentive System – This is the first stage of an LBO operation. The investor group headed by the company's top managers and/or buyout specialists, usually, arrange about 10 percent of the cash, which becomes the equity base of the new firm with the remainder of the equity being provided by outside investors. Stock price-based incentive compensation in the form of stock options or warrants are also available to the managers, thereby, raising the equity share of the management (excluding directors) to a higher percentage possibly exceeding 30 percent. Incentive compensation plans based on objective results, such as earnings, are also frequently provided to managers.

Purchase of all Outstanding Shares or Assets of the Company by the Organizing Sponsor Group – In the second stage of an LBO operation, the organizing sponsor group purchases all outstanding shares of the company and makes it private (stock-purchase format) or purchases all the assets of the company (asset-purchase format). The buying group in the latter case forms a new, privately held corporation.

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Reduction in Operating Costs and Change in Marketing Strategies by the Management – The management, in the third stage of the operation, cuts operating costs and changes the marketing strategies in order to increase profits and cash flows. The management takes the following steps in order to meet its objectives:

Consolidate or reorganize production facilities.

Improve inventory control and accounts receivables management.

Change product quality, product mix, customer service, and pricing.

Trim employment through attrition.

Attempt to extract better terms from suppliers.

Lay off employees, and

Reduce expenditure on research and new plants and equipment.

Making the Company Public again by the Investor Group – The fourth stage involves making the company public again by the investor group if the goals of the group are achieved by the previously taken steps of the management. Public equity offering, also known as Secondary Initial Public Offering (SIPO), is used to bring about this reverse LBO.

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Paper II

Part D: Case Study

1. Projected cash flow statement of Xymex equipment company for the next five years.

(Rs. in lakh)

	Year	2001	2002	2003	2004	2005
a.	Net Sales	2317.41	2502.80	2703.02	2919.27	3152.81
b.	Cost of goods sold	1483.14	1601.79	1729.94	1868.33	2017.80
c.	Depreciation	62.54	66.29	70.27	74.49	78.96
d.	Selling and administration expenses	324.44	350.39	378.42	408.70	441.39
e.	Total expenses	1870.12	2018.48	2178.63	2351.51	2538.15
f.	PBIT	447.29	484.32	524.40	567.75	614.66
g.	Tax 35.00%	156.55	169.50	183.50	198.70	215.13
h.	NOPLAT	290.70	314.8	340.90	369.05	399.53
i.	Gross cash flow (H + C)	353.28	381.10	411.13	443.50	478.49
j.	Increase in NWC	37.18	44.49	48.05	51.90	56.05
k.	Capital expenditure	139.04	150.17	162.18	175.16	189.17
l.	Net recovery of working capital					756.67
m.	Replacement value of fixed assets					1200.00
n.	Free cash flow (I – J – K + L + M)	177.06	186.44	200.89	216.47	2189.94

Net Working Capital 24%

Assumption: The NWC as a proportion of sales remain constant.

(Rs. in lakh)

Year	2001	2002	2003	2004	2005
NWC	556.18	600.67	648.73	700.62	756.67
Increase in NWC	37.18	44.49	48.05	51.90	56.05

2. Calculation of cost of capital of Xymex Ltd.

Interest rate for 2,000	12.88%
Tax rate	35.00% approx
Cost of debt 12.88 x (1 – 0.35)	8.37%
Cost of equity	10.31%
Cost of capital $= \frac{875}{1139}$ x 9.86%	
$10.31 + (1 - 0.35 \text{ x } 12.88 \text{ x } \frac{264}{1139})$	

(Rs. in lakh)

Year	2001	2002	2003	2004	2005
Net cash flow	177.06	186.44	200.89	216.47	2189.94
PVIF at 9.86%	0.910	0.829	0.754	0.687	0.625
PV of cash flows	161.17	154.48	151.51	148.61	1368.77

Present Value	1984.23
Less debt:	264.00
Value of firm	1720.23
Value per share	57.34

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3. According to the valuation of Xymex Ltd., the value of its stock is Rs.57.34 per share which is the upper limit that Lumex should pay for Xymex's shares. The existing market price of Xymex's stock which is Rs.25 stock can be taken as the floor price acceptable to Xymex's management. As most of the acquisition or merger deal is settled at a price which is much higher than the existing market price of the acquired company's stock, Xymex's management will naturally ask for a price which is much higher than the existing market price of its stock. So, the management of both the companies will negotiate the price of Xymex's stock so that shareholders of both the companies benefit from the deal.

Suppose the price to be paid by Lumex for Xymex's stock is Rs.35. At this price, Lumex must exchange 18.13 lakh shares.

Exchange Ratio = $\frac{35}{57.9}$ = 0.6044

$\therefore$ Number of shares exchanged = 0.6044 x 30 lakh

= 18.13 lakh.

After the merger, Lumex would have 207.33 (189.2 + 18.13) lakh shares outstanding in its book.

That is, the exchange ratio is 0.6043 share of Lumex for each outstanding share of Xymex Ltd.

EPS of Lumex after acquisition $\left(\frac{427.05+105.83}{207.33}\right)$	2.57
EPS before acquisition	2.26
EPS will increase by	13.72%

4. Lumex Limited can finance the acquisition by cash or exchange of shares or a combination of cash, shares and debt. The means of financing would change the debt equity mix of the combined or the acquiring firm after the merger. If Lumex decides to acquire Xymex by paying cash, it can borrow funds as well as disinvest its investment and use its surplus cash for acquiring Xymex. A cash offer does not cause any dilution in the EPS and the ownership of the existing shareholders of the acquiring company, as a result of which the price of a particular scrip does not fluctuate widely in the market.

Currently the debt equity ratio of Lumex Limited is	0.46:1
After the merger, the total debt of the combined entity will be	Rs.2,497.00 lakh

The debt capacity of the merged entity will depend on its target debt-equity ratio. Depending on the target debt-equity ratio that is acceptable, money can be borrowed. If there is any shortfall, the rest of the amount required can be brought in the form of cash in hand and liquidating investments. However, this may result in an adverse effect on the share prices of Lumex as its risk would be increased due to the additional borrowing.

Alternatively, if shares are exchanged then the new entity will have

207.33 new equity and EPS	2.57
Present P/E ratio	25.65
If P/E ratio is unchanged then market price will be	65.92

As Market Value (MV) is increased, exchange of shares is advisable.

MV of Xymex prior to the merger (25x30 lakh shares) = Rs.750.00 lakh

MV of Xymex after merger = (18.13 lakh shares x 65.92) Rs.1195.13 lakh

Even shareholders of Xymex Limited are benefitted from the acquisition.

5. Motives for acquiring Xymex Limited.

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a. To increase the growth rate of the company. In the recent years, the growth rate of the company has been decreasing due to the slow down in the cement industry, as it manufactures equipments for the cement industry. Xymex is catering to the requirements of various industries. By acquiring Xymex, Lumex can diversify its product portfolio so that recession in any one industry will not affect the growth of the company.

b. Xymex is operating in a related field of business. Acquiring Xymex will bring in the necessary synergy in Lumex's business. Also, it can ward off decline in demand due to the cyclical nature of one industry by shifting its product line to other industries.

c. Another reason for acquiring Xymex is its wide distribution network. Lumex need not invest separately to strengthen its distribution network.

d. Another reason could be the size of Xymex which is much smaller than Lumex.

e. Xymex is catering to various industries and it has a wide range of products for all these industries. So it is a good target for Lumex.

It can be said that the move of Lumex's management is justified as Xymex is a good target company. If the acquisition is through exchange of shares, the EPS of Lumex will increase and subsequently the market price of its shares would also increase. Thus, post-merger, the value of both firms increases creating gains for shareholders of both the companies.

Part E: Caselets

Caselet 1

1. Most of the motives for international mergers and acquisitions are quite identical to those for purely domestic transactions, whereas others are unique to international arena. These motives are as follows:

Growth

- Accomplish long-run strategic objectives
- Grow beyond the capacity of saturated home market
- Size and economies of scale required to face global competition effectively
- Market extension abroad and at the same time protection of domestic market shares.

Technology

- To exploit technological knowledge advantage
- To acquire technology where it is missing.

Government Policy

- To circumvent protective tariffs, quotas, etc.
- To decrease dependence on exports.

Exchange Rates

- Impact on relative costs of foreign versus domestic acquisitions
- Impact on the value of repatriated profits.

Political and Economic Stability

- To invest in a safe environment
- To invest in a predictable environment.

Diversification

- Geographically
- By product line
- To decrease systematic risk.

Other Crucial Motives

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- Differential labor costs, productivity of labor
- To follow clients
- To obtain assured source of supply of raw materials
- Extend advantage in different products.

Caselet 2

1. The following valuation techniques are being practiced by Indian corporates to value the target company and fix the bid price.

Financial Valuation

Financial Valuation starts with the P/E ratio and the Earning Per Share (EPS). P/E ratio, under normal conditions, depends on the goodwill of the business, its proven abilities, its future prospects and the character of the business among other things. The EPS of a share influences its market price. Hence, P/E multiplied by EPS will give the accurate estimate of the market price, which otherwise is prone to short-term fluctuations.

Tangible assets such as lands and buildings and intangible assets like brand name are valued as per current business practices. The asset can be valued at either the fair value or the open market value.

Free cash flows are forecast over a period of time and discounted by the firm's cost of capital. This gives the valuation on cash flow basis that clearly depicts the future finance potential of the company.

The cost of establishing same assets and capacities (substitution cost) is looked at by the acquiring firm. If the substitution cost is very high, the acquisition is favorable and vice versa.

A combined estimate of book value, future cash flows, market value and goodwill of the target firm are taken into consideration by the acquiring firm while carrying out the valuation exercise.

From the Indian perspective, apart from financial valuation, there are 5Ps that are to be considered while valuing the target company.

Personnel

In a process of takeover, the personnel of the target firm play a key role. The purpose of acquiring a going concern is to leverage on the already existing strong team and *vis-à-vis* establish a new team that involves more time and cost. For instance, Nicholus Labs acquired Roche mainly because Roche has a well-trained sales force that would be complementing Nicholus's business.

Product

The acquiring firm looks for proprietary products and established brand names that would create value for the firm. To cite an example, HLL has acquired BBLIL for its seventeen well established brands in the tea segment.

Plant

In commodity businesses, plant capacities play a major role in cutting costs and achieving economies of scale. For example, India Cements acquired Raasi Cements and Visaka Cements to increase its capacity and establish itself as a leader in South India.

Potential

The scope for a firm's growth is the comparison between the industrial average growth rate and the firm's growth rate. This provides the basis for the likely growth in the firm's earnings capacity.

Profit

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The announced profit of the firm is the basis for valuation. For example, SRF Finance has selected a buyer with a lower bid, as GE Caps has scored more in the 5Ps over the other competitors.

Pricing the Bid

There are various techniques available to value a company and find out a bid price.

- Divide the company's Net Asset Value by its total number of shares to get the Net Asset Value per share.
- Make a projection of the target company's turnover and profit for the coming years. Discount the profit figure of fifth year at the expected rate of return. Divide the discounted figure by the number of shares.
- Calculate the average price of the target company's share over the last one year.

These three values indicate the range within which the initial negotiating price must be fixed.

2. The acquisition being paid for with stocks was attractive to P&G, as it knew that the stock price of Smucker would go up with the announcement of the merger. Stock price of Smucker rose by US$5.26 at NYSE generating value for shareholders. In addition, P&G would also have a chance to participate in Smucker's management.

3. In the short run, the stock price of the acquiring firm usually goes up as investors see the acquisition move as a strategy aimed at creating value for shareholders. The market usually reacts positively to this move, which in turn increases the market price of the stock. However, on certain occasions, acquisition through issue of stocks tend to result in fall in EPS, which may adversely affect the stock price initially till such time the contribution from the acquired unit reaches its full potential.

Caselet 3

1. Leveraged buyout is a transaction used to take a public corporation private that is financed through debt such as bank loans and bonds. Because of the large amount of debt (50% or more) compared to equity in the new corporation, the bonds are usually rated below investment-grade, rightly termed as high-yield or junk bonds. Investors can participate in a LBO through either the purchase of the debt i.e., purchase of the bonds or participation in the bank loan, or the purchase of equity through an LBO fund that specializes in such investments.

The debt is backed by the assets of the acquired firm and is mostly amortized over a period of less than 10 years. As funds are generated by operations or from the sale of assets of the acquired firm, the debt to be paid off is scheduled. The sale of assets occurs when the investor group is motivated to take control in part because of what it considers as ill-fitting acquisitions by the firm in the past.

2. Special purpose vehicle is also called as a 'bankruptcy-remote entity' whose operations are restricted to the acquisition and financing of specific assets. The Special Purpose Vehicle is usually a subsidiary company with an asset/liability structure and legal status that makes its obligations secure even if the parent company turns bankrupt.

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Model Question Paper IV

Time: 6 Hours **Total Points: 200**

Paper I

Time: 3 Hours **Points: 100**

Part A: Basic Concepts (30 Points)

Answer all the questions. Each question carries one point.

1. Which of the following statements is/are true about a "White Knight"?

a. It is used to avoid a hostile takeover.

b. It is a more desirable partner from whom target firm seeks to draw an offer.

c. It is a friendly takeover device.

d. Both (a) and (b) above.

e. None of the above.

2. A large portion of mergers in the 1920s represented

a. Market extension mergers

b. Pure conglomerate mergers

c. Product extension mergers

d. Both (a) and (c) above

e. None of the above.

3. Which restructuring activity involves an intersection of only a small fraction of the activities of the companies involved and is usually for a limited duration?

a. Amalgamation.

b. Absorption.

c. Acquisition.

d. Joint Venture.

e. Consolidation.

4. The price offered and accepted by the target company is Rs.40 per share, and the acquiring company's share price is Rs.60. What is the share exchange ratio?

a. 0.333.

b. 0.667.

c. 1.333.

d. 1.667.

e. 0.50.

5. In the formula for weighted average cost of capital, what does 'B' stand for?

$k = k_b (1 - T)(B/V) + k_e (S/V) + k_p (P/V)$

a. Market value of preference capital.

b. Market value of shareholders equity.

c. Market value of debt.

d. Total market value of the firm.

e. None of the above.

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6. Firm X can invest Rs.5,00,000 now to receive Rs.1,03,400 for 10 years. The cost of capital for this project is 14%. What is the IRR of the project?

a. 12%.

b. 13%.

c. 14%.

d. 16%.

e. 17%.

7. If risk-free rate = 10%, Beta = 0.8 and market premium is 6%, what is the cost of capital according to the CAPM approach?

a. 9.8%.

b. 10 %.

c. 14%.

d. 14.8%.

e. None of the above.

8. In a market, one firm has 52 percent market share and 24 firms hold the remaining 48 percent, each with a 2 percent market share. Its H index would be

a. 2704

b. 2800

c. 2700

d. 2896

e. 2752.

9. Which theory of merger advocates the claim that merger gains are the result of increased concentration leading to monopoly effects?

a. Agency problem.

b. Market power.

c. Strategic alignment.

d. Diversification.

e. None of the above.

10. Which of the following are the only reasons for divestitures according to Linn and Roseff?

i. Managerial efficiency.

ii. Tax incentives.

iii. Assets are worth more as part of buyer's organization than as part of sellers.

iv. The assets actively interfer with other profitable operations of the seller.

a. Both (i) and (ii) above.

b. Both (i) and (iii) above.

c. Both (iii) and (iv) above.

d. Both (i) and (iv) above.

e. All of the above.

11. These corporate restructuring activities can be divided into following broad categories

i. Operational

ii. Reformulation

iii. Functional.

iv. Divestiture

a. Both (i) and (iv) above

b. Both (ii) and (iii) above

c. Both (i) and (iii) above

d. Both (iii) and (iv) above

e. All of the above.

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12. AB Ltd. has entered into a contract with CD Ltd. to form a new company AC Ltd. which would manufacture cars for a period of 10 years, by sharing the technology of CD Ltd. and the property of AB Ltd. What would you name the contract?

a. Merger.

b. Consolidation.

c. Divestiture.

d. Strategic alliance.

e. Tender offer.

13. Which of the following terms rightly describes the combination of two or more partnerships into one publicly traded partnership?

a. Roll-out MLP.

b. Acquisition MLP.

c. Start-up MLP.

d. Liquidation MLP.

e. Roll-up MLP.

14. Which of the following is/are false about ESOPs?

i. Participants receive the securities while in service.

ii. Participants are allowed to sell the shares allocated to them.

iii. Dividends and voting rights are passed through only with respect to shares actually allocated to participant's accounts.

a. Only (i) above.

b. Only (ii) above.

c. Only (iii) above.

d. Both (i) and (ii) above.

e. Both (ii) and (iii) above.

15. This offer provides one or more of securities, the right or option to exchange part or all of their holdings for a different class of securities of the firm. Which offer is this?

a. Tender offer.

b. Share repurchase.

c. Exchange offer.

d. Buy back.

e. None of the above.

16. Which of the following functions can be considered as external control mechanisms?

a. Control function of the Board of Directors.

b. Monitoring role of large shareholders.

c. Tender offers.

d. Proxy fights.

e. Both (c) and (d) above.

17. Firms experiencing complete management turnovers are characterized by

a. Poor performance relative to their own industries

b. Poor industry performance

c. Lack of proper monitoring by large shareholders

d. Opposing views within the board

e. The board being completely unresponsive to company's problems.

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18. Which of the following is/are true for q ratio?

a. It is equal to the debt-equity ratio.

b. It is the ratio of the market value of a firm's shares to the replacement cost of the assets represented by those shares.

c. If average q ratio is 0.6 and the average acquisition premium paid over market value is 40 percent, the purchase price is 0.6 times 0.4 i.e., 36 percent of the replacement cost of corporate assets.

d. The q ratio was the only factor responsible for the rise of the merger activities during the 1960s.

e. Both (b) and (c) above.

19. Which of the following is a/are way(s) of avoiding a free rider problem?

a. Announcement of dilution of the value of the non-tendered shares after the takeover.

b. Keeping the exchange rate of the shares too low.

c. Announcing a two-tier offer.

d. Reducing the incentives of the shareholders.

e. Both (a) and (c) above.

20. Which of the following terms refers to the most valuable segments of a company that is wanted by an acquirer?

a. Stars.

b. Cash cows.

c. Crown jewels.

d. Dogs.

e. Question marks.

21. A twelve member board of a company is divided into three classes, with only four members standing for election to a three year term each year. Which of the following antitakeover arrangements is the above referring to?

a. Fair price amendments.

b. Super majority amendments.

c. Classified boards.

d. Authorization of preferred stock.

e. None of the above.

22. Which of the following activities refers to a "Stub" in leveraged recapitalization?

a. Issue of debentures in exchange for equity shares.

b. Issue of preferred shares in exchange for equity shares.

c. Issue of new shares in exchange for old shares.

d. Purchase by a firm of its own shares.

e. None of the above.

23. Which of the following is/are false regarding the front-end loaded tender offer?

i. When the offer price is greater than the price of unpurchased shares, it is called front-end loaded.

ii. When the offer price is less than the price of unpurchased shares, it is called front-end loaded.

iii. Front-end loading occurs only in two-tier offers.

iv. Front-end loading can occur not only in two-tier offers, but also in partial and any-or-all offers.

a. Only (i) above.

b. Both (i) and (iv) above.

c. Only (ii) above.

d. Both (ii) and (iii) above.

e. Both (i) and (iii) above.

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24. Which of the following statements is true?

a. Gross cash flow, computed for the purposes of valuation of a company does not include outflows on account of taxes.

b. Free cash flow is nothing but the given total of the flows to the various suppliers of finance.

c. The free cash flow concept is directly opposed to the concept of dividend as a "residual income".

d. Forecasts of free cash flow should ideally be in real terms and not nominal terms.

e. Free cash flows cannot be forecasted unless complete projections are available for the life of the company.

25. Which of the following statements is/are false?

a. Reported earnings will be higher with the pooling of interests accounting treatment than they will be with the purchase treatment.

b. As cash flows are not affected by the choice of accounting method, there is no effect on the economic value of the merger.

c. Under the purchase method, if the consideration paid is less than the fair market value of tangible assets, the difference will be shown as capital reserve.

d. Both (a) and (b) above.

e. None of the above.

26. Which of the following statements is false?

a. A leveraged buyout deal is a mode of going private by a public company.

b. A strategic alliance is a flexible arrangement between firms whereby they agree to work together to achieve a specific goal.

c. A strategic alliance results in the creation of a new entity.

d. A public offering commands better pricing than placement with few investors.

e. Normally, buy-back of shares is priced at a premium over the prevailing market price.

27. Which of the following statements is false?

a. Golden parachutes are agreements that provide for payment of huge severance packages to the senior management executives in case of takeover of the firm.

b. Golden parachutes do not prevent hostile acquisitions.

c. Golden parachutes are very effective in case of large acquisitions.

d. Silver parachutes cover the layers of management immediately below the top management levels.

e. Silver and tin parachutes are triggered by the termination of service of the employee, unless the termination was for a cause.

28. A spin-off differs from a split up in that

a. A spin-off is financed using leverage whereas a split up is not

b. The parent company continues to exist in a spin-off while it ceases to exist in a split up

c. A spin-off increases the corporate value whereas a split up decreases it

d. A spin-off is not hostile while a split up is

e. In a spin-off no new company is created unlike a split up.

29. Which of the following is true regarding a corporate spin-off?

a. A corporate spin-off results in duplication of costs.

b. A spin-off may lead to the acceptance of positive net present value projects previously rejected.

c. To the extent that some non-owners think that the value of the business unit to be spun off is higher than the current owners, the spin-off may increase value.

d. Both (a) and (b) above.

e. All of (a), (b) and (c) above.

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30. Which of the following is not a/are not feature(s) of a leveraged buyout?

a. A publicly traded company raises cash through increased leverage, usually massive leverage.

b. Public stockholders are bought out and the company or business unit of a company becomes private.

c. In a leverage buyout, the shares are no longer traded on the open market.

d. Both (a) and (c) above.

e. Both (b) and (c) above.

Part B: Problems (50 Points)

Solve all the problems. Points are indicated against each problem.

1. Sigma India Ltd. is planning to acquire Universal Ltd. Universal currently has a net operating income of 35 lakh. This income is expected to grow at 20% per year for five years and stop growing thereafter. The ratio of investment to the after-tax net operating income of the company is 25%. The required rate of return on investments with the risk characteristics of Universal is 16 %.

What is the maximum that Sigma can pay for Universal to earn at least a 16% return on investments? (Assume no synergy effect)

(7 points)

2. Alpha Ltd. offers to acquire 100% of Beta Ltd. stock for Rs.75 a share which is at Rs.20, premium to the current price. Alpha's stock is currently selling for Rs.125 per share. Beta has 5 lakh shares of common stock outstanding.

a. What is the share exchange ratio of Beta's stock in terms of Alpha's stock if the exchange ratio is based on their market prices?

b. What is the value of Alpha's shares exchanged for 100 shares of Beta's stock?

Suppose Alpha's share price falls to Rs.100 before the transaction is started. Beta's shareholders are protected if Beta has negotiated a floating exchange ratio of its stock in terms of Alpha's stock.

c. What is the new share exchange ratio?

d. What is the value of Alpha's shares received by a holder of 100 shares of Beta's stock?

(2 + 3 + 2 + 3 = 10 points)

3. Pearl Ltd. (the transferor company) & Emerald Ltd. (the transferee company) amalgamate in an exchange of stock to form PE Ltd. The pre-amalgamation balance sheets of the respective companies are as follows:

	Pearl Ltd. (Rs. in lakh)	Emerald Ltd. (Rs. in lakh)
Fixed assets	110	60
Current assets	80	40
Total assets	190	100
Share capital (Rs.10 face value)	80	40
Reserve and Surplus	50	40
Debt	60	20
	190	100

For each share held in Emerald Ltd., 2 shares of Pearl Ltd. were given in exchange (Face value: Rs.10; share premium 25) as the market price of Pearl Ltd. is Rs.35. The fair market value of the fixed assets and current assets of Emerald Ltd. was assessed at Rs.70 lakh and Rs.45 lakh respectively. Prepare the post-amalgamation balance sheet of PE Ltd. under the 'Pooling' and 'Purchase' methods.

(12 points)

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4. Sonia Products Ltd. is planning to acquire Madhur Products Ltd. in order to expand its own installed capacity. The company will then be in a position to cater to the increasing demand for its products and services. The equity related cash flow of Sonia Products Ltd. before and after the merger are given below:

(Rs. lakh)

Year	1	2	3	4	5
Cash flows before acquisition	14.	16.8	20.4	22.6	24.5
Cash flows after acquisition	20.8	23.4	24.7	32.9	38.6

The cash flows are expected to grow at a rate of 6.5% beyond year 5 whether Madhur Products Ltd. is acquired or not. The other relevant data relating to the two companies is given below:

Company	Sonia Products	Madhur Products
Number of outstanding equity shares	180 lakh	90 lakh
Market Price (Rs.)	28	34
Book Value (Rs.)	27	22.6

Calculate the maximum exchange rate that the management of Sonia Products Ltd. can offer to the shareholders of Madhur Products Ltd. so that the present value of its equity related cash flows after the merger is at least 18% more than the existing level. The cost of equity may be assumed to be 14%.

(12 points)

5. Sarika Ltd. is planning to raise funds through a public issue of equity for the first time. However, the management of the company is not sure about the value of the company and therefore, it attempts to study similar companies in the same line which are comparable to Sarika in most of the aspects. The study reveals the following.

(Rs. in millions)

Company	Sarika Ltd.	Diffusion Ltd.	Scarlet Ltd.	Crimson Ltd.
Sales	20.91	22.78	27.98	25.61
EBIT	5.24	7.98	7.71	6.35
Book Value	12.21	10.85	13.77	15.6
Market Value	–	11.32	15.65	18.35

Determine the value of Sarika Ltd. using the comparable company approach.

(9 points)

Part C: Applied Theory (20 Points)

Answer the following questions. Points are indicated against each question.

1. An organization is looking for a merger option of the most suitable form, keeping in mind the nature of business, industry dynamics, etc. Explain the major types of mergers.

(10 points)

2. Joint ventures are slowly emerging as the best tool for reaching new markets. Discuss joint venture as a business strategy.

(10 points)

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Paper II

Time: 3 Hours **Points: 100**

Part D: Case Study (50 Points)

Read the case carefully and answer the following questions.

1. Estimate the value of Blue Haven assuming that after the supernormal growth is over, the net operating income of Blue Haven would grow at 10% per year, with the investment to after-tax NOI still being 0.20.

2. i. Compute the value to after-tax earnings ratio assuming the continuity of 10% growth in NOI after the supernormal growth.

ii. Compute the ratio for a no growth in NOI after the supernormal growth. Compare the ratios.

3. i. Assuming zero growth in the company following the supernormal growth, measure the sensitivity of the company to the values, to the changes in the variables as under:

$b_s = 1.0$; $g = 30\%$; $k = 20\%$.

ii. Assume a zero growth after the supernormal growth. Also, show the 2nd term in the calculation as a percentage of the total value in each case.

4. What all strategic planning processes should be carried out by Blue Haven before it decides to merge with Terminators Inc.?

5. Synergy happens to be the most motivating factor behind every merger. What kind of synergies would Blue Haven experience after it takes over Terminators Inc.?

(4 + 8 + 10 + 14 + 14 = 50 points)

Blue Haven was established in 1956 to manufacture heavy machineries. In its golden jubilee year, it expertised in the production of agricultural machineries and took up wholesaling of its products as well. It predicted good returns in the joint business of manufacturing and wholesaling. It is also estimated that the company will have supernormal growth for the next 8 years. It has provided the following data:

Extract from balance sheet as on 31 March, 20x2 (Rs.in millions)

Liabilities		Assets	
Equity share capital	67	Plant assets net of accumulated depreciation	100
General reserves	56	Cash	54
Long-term loans	72	Debtors	60
Creditors	97	Inventories	86
Outstanding expenses	3		
Other current liabilities	5		
Total liabilities	300	Total assets	300

Required rate of return	15%
Net operating income	Rs.5 million
Ratio of investment to after-tax NOI	0.20
Tax rate	40%

The NOI is expected to grow at 25% for 8 years.

Blue Haven is also considering merging with Terminators Inc., another heavy machinery major having its name in industrial machineries. The prospective target company has a good presence in all the metro cities. The management of Blue Haven is yet to decide on the merger. Though the merger sounds alright to the project manager of the company, he is still in some doubt as the Terminators Inc. reported a 17% drop in the after tax net operating income. Moreover, there had also been some internal conflicts of ideas in the organization.

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Part E: Caselets (50 Points)

Caselet 1

Read the caselet carefully and answer the following questions.

1. What do you mean by 'strategic alliance'? How is the strategic alliance different from a 'joint venture'?

(14 points)

2. Discuss the various factors that enthuse corporates to form 'strategic alliances'?

(8 points)

In the recent past, the number of strategic alliances have increased dramatically in the corporate world. As per the findings of Booz-Allen & Hamilton, the number of alliances is growing at the annual rate of 20%. Alliances range in scope from an informal business relationship based on a simple contract to a joint venture agreement in which for legal and tax purposes, either a corporation or partnership is formed to manage the alliance.

Corporates taking part in alliances report that around 18% of their revenues flow from their alliances. This figure is estimated to reach 35% by the end of 2004. According to a Booz-Allen Survey, in Europe (the most active area for alliances) many companies record as much as 42% of their revenues coming from alliances. Further, ROI from such alliances are of more than 23%. Most of the companies reported a higher ROI on their alliances than on their core businesses. Around 25 most lively companies in alliances recorded around 17% return on equity – 40% more than the average of the Fortune 500. Undoubtedly, alliances pay-off for the participants.

Caselet 2

Read the caselet carefully and answer the following questions.

1. Against the given background, highlight the key issues that need to be addressed while entering into a preliminary negotiation with the vendor.

(5 points)

2. What is the need for 'Letter of Intent' in a merger and acquisition transaction?

(7 points)

In November 1998, Clariant and Ciba Speciality Chemicals announced that they would merge to form the world's largest speciality chemicals company. Both companies have a range of complementary products in pigments, additives and polymers among others. The merger will bring together two of the world's main competitors in speciality chemicals business. The Indian operation of Clariant (India) and Ciba Speciality Chemicals (India) (Ciba) are expected to merge after the global merger. The combined entity is expected to become the market leader in segments like textiles, dyes and chemicals, paper and leather chemicals.

There is however a possibility of a roadblock confronting Clariant and Ciba. Ciba reportedly has a non-competent clause arrangement with Indian Dyestuff Industries through a joint venture called Swiss Textile Chemicals. Unless modalities are worked out, the textile division of the two companies might delay the merger of Indian operations.

Successful mergers and acquisitions are neither an art nor a science but a process. The process begins with planning for preliminary negotiations and wrapping up final negotiations. It is important to verify that the vendor has the authority to negotiate on behalf of the shareholders. The vendor of a publicly listed company must have the requisite board authority to represent the company.

Usually, it is advisable not to involve the lawyers on either side during the meeting for deciding the heads of agreement or the 'letter of intent'. Lawyers tend to create an adversarial atmosphere when the purpose is to reach a commercial agreement.

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Caselet 3

Read the caselet carefully and answer the following question.

1. In the light of the caselet, discuss the major strategy choices for going international.

(16 points)

Most of the companies across the globe are now turning to globalization to achieve growth. Sears Roebuck (a US-based retailing company) believed that it was better to go global than to diversify. Its brief incursion in the financial services business turned to be unsuccessful; while at the same time, Wal-Mart was snatching an incredible market share in the global arena.

Forecasting M&As in the light of globalization strategy has much to do with the compatibility of the product or service in the foreign market in what is referred to as the 'liability of foreignness'. Kellogg's (a US-based cereal maker) learned that globalization was not suitable for its flagship brand 'Cornflake' in India, when it estimated the eating habits of the Indian people *vis-à-vis* their income levels. On the other hand, Coca-Cola and Mc Donald's are excellent examples of companies that went global with local response in mind.

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Model Question Paper IV

Suggested Answers

Paper I

Part A: Basic Concepts

1. ***(d)*** In a hostile takeover, the target firm may seek to avoid being acquired or may seek to join another firm with which it desires to be associated. Such a partner is referred to as a "White Knight".

2. ***(d)*** A large portion of the mergers in the 1920s represented product extension mergers like IBM and General Foods, market extension mergers like in food retailing, department stores, and vertical mergers in the mining and metal industries.

3. ***(d)*** Joint ventures involve an intersection of only a small fraction of the activities of the companies involved and are usually for a limited duration of ten to fifteen years or less.

4. ***(b)*** Share exchange ratio = Offer price/Share price of acquirer = 40/60 = 0.667

   It means that the acquiring company has to give 0.667 shares of its own stock for each share of the target company.

5. ***(c)*** The weighed average cost of capital is given by the formula

   $k = k_b (1–T) (B/V) + k_e (S/V) + k_p (P/V)$

   Where,

B	=	Market value of debt
S	=	Market value of shareholders equity
P	=	Market value of preference capital
V	=	Total market value of the firm (B+S+P)
K_b	=	Cost of debt
K_e	=	Cost of equity capital
K_p	=	Cost of preference capital.

6. ***(d)*** $0 = 1,03,400 [PVIFA_{(IRR, 10 yrs)}] – 5,00,000$

   $[PVIFA_{(IRR, 10 yrs)}] = 5,00,000/1,03,400 = 4.835$

   Therefore, IRR of the project = 16% approximately.

7. ***(d)*** CAPM equation $k_e = R_f + \beta [R_m – R_f]$

   $= 0.10 + 0.8 (0.06)$

   $= 0.10 + 0.048 = 0.148$ or 14.8%.

8. ***(d)*** $H = (52)^2 + 48 (2)^2 = 2896$.

9. ***(b)*** One of the main motives for a merger is to increase the share of a firm in the market. Increasing the market share means increasing the size of the firm relative to the other firms in an industry. This is also referred to as monopoly power. Through market power, a firm gets the ability to set prices at levels that are not sustainable in a more competitive market

10. ***(c)*** According to Linn and Roseff, statements (iii) and (iv) are the only two motives for divestitures.

11. ***(c)*** Operational restructuring refers to outright or partial purchase or sale of companies or product lines or downsizing by closing unprofitable, non-strategic facilities. Financial restructuring refers to the actions taken by the firm to change its total debt and equity structure.

12. ***(d)*** Joint Venture or Strategic Alliance is a combination of the subsets of the assets contributed by two business entities for a specific purpose and for a limited duration. Each of the joint venture partners continue to exist as a separate firm and the joint venture represents a new business enterprise.

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13. *(e)* A roll-up MLP is formed by a combination of two or more partnerships into one publicly traded partnership. Such MLP has a general partner for a master limited partnership and units which are owned by the limited partners.

14. *(d)* ESOPs provide less than direct stock ownership. Participants do not receive any distribution of securities from the plan until they separate from service. Participants are not allowed to sell even those securities which have been allocated to them.

15. *(c)* A transaction, which provides one or more of securities, the right or option to exchange part or all of their holdings for a different class of securities of the firm is called an exchange offer. Example, an exchange of debt for common stock. This enables a change in the capital structure with no change in investment.

16. *(e)* Tender offers and proxy fights are external control mechanisms. Internal control mechanisms include controlling functions of the Board of Directors, the monitoring role carried out by large shareholders, competition among managers within the firm, etc.

17. *(a)* Firms experiencing complete turnover of management are characterized by poor performance relative to their own industries rather than poor industry performance.

18. *(b)* Q ratio, otherwise known as Tobin's ratio, is the ratio of the market value of a firm's shares to the replacement cost of the assets represented by those shares. If the average q ratio is 0.6 and the average acquisition premium paid over market value is 40 percent, then purchase price is 0.6 x 1.4 i.e., 96 percent of the replacement cost of corporate assets.

19. *(e)* The anticipated dilution induces the shareholders to tender their shares at a lower price. Further, the announcement of the two-tier prices would lead to more competition among bidders leading to maximization of the differentiation of first and second tier prices. This in turn, would increase the cost to shareholders for declining to tender.

20. *(c)* Crown jewels are the most valuable segments of a company which are generally most wanted by an acquirer. All the other options are the terms given for business segments in a Boston Consulting Group.

21. *(c)* Classified board is an antitakeover measure which divides a firm's Board of Directors into several classes, only one of which is up for election in any given year, thus delaying effective transfer of control to a new owner. It is also called staggered board.

22. *(c)* New shares issued in exchange for old shares in a leveraged recapitalization are called stubs.

23. *(d)* In a takeover bid, when the offer price is greater than the price of unpurchased shares it is called front-end loaded. When the bid is front-end loaded, individual shareholders will have the incentive to tender to receive the higher front-end price.

24. *(b)* The free cash flow represents the cash flow available to all suppliers of capital to the firm.

25. *(e)* All the given alternatives are true.

26. *(c)* A strategic alliance is created only for a specific purpose and thus the identity of the firms is retained.

27. *(b)* Golden parachutes are primarily designed to act as deterrents for hostile acquisitions.

28. *(b)* In case of spin-off, a new subsidiary company is formed but in case of split up, there is a complete break-up of the company into two or more new companies.

29. *(e)* In spin-off, a new legal entity is created to take over the operations of a particular division or a unit of the company. All the given alternatives are true.

30. *(a)* Massive leverage is not present in a publicly traded company.

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Part B: Problems

1. Here, Universal is expected to grow at a supernormal growth rate of 20% for 5 years and then stop growing.

The valuation of a firm with temporary supernormal growth, followed by no growth is give as

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

$$V_0 = 35(1-0.4)(1-0.2)\sum_{t=1}^{5}\frac{(1+0.20)^t}{(1+0.16)^t} + \frac{35(1-0.4)(1+0.20)^{5+1}}{0.16(1+0.16)^5}$$

= 35 (0.6) (0.8) (1.0345) [{$(1.0345)^5$ – 1}/0.0345] + [35 (0.6) (2.986) / 0.336]

= 17.3796 x 5.357 + 186.63 = 93.1025 + 186.63 = Rs.279.73 lakh.

Sigma India Ltd. can pay up to Rs.279.73 lakh (approximately) for Universal and earn the applicable cost of capital of 16 % if the projected growth rates are realized.

2. a. Exchange ratio of Beta's stock in terms of Alpha's stock = Share price of Beta/Share price of Alpha = 75/125 = 3/5 or 0.6: 1.

b. Rupee value of Alpha's shares exchanged for 100 shares of Beta.

Shareholders of Beta would get 0.60 shares for every share held. Hence, for 100 shares of Beta stock a shareholder would get 60 shares.

Value of these shares = 60 x 125 = Rs.7,500

c. The new exchange ratio would be 75/100 = 3/4 or 0.75: 1.

d. The rupee value of Alpha's shares received by a holder of 100 shares of Beta.

According to the answer in (c) the shareholders of Beta would get 0.75 shares for every share held.

Hence, a shareholder holding hundred shares would get 0.75 x 100 = 75 shares.

Value of these shares would be 75 x 100 = Rs.7,500.

3. Balance Sheet of PE Ltd. after amalgamation

(Rs. in lakh)

	Pooling Method	Purchase Method
Fixed Assets	170	180
Current Assets	120	125
Goodwill	–	185
Total Assets	290	490
Share Capital	120	160
Reserves and Surplus	90	50
Share Premium	–	200
Debt	80	80
Total Liabilities	290	490

Working Notes:

i. Purchase consideration

No. of shares issued = 8,00,000

Share capital = Rs.80,00,000

Share premium = Rs.2,00,00,000

= Rs.280 lakh

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ii. Net assets

Acquired = Rs.115 lakh – Rs.20 lakh

= Rs.95 lakh

Goodwill = Purchase consideration – Net assets acquired

= 280 – 95 = Rs.185 lakh.

4. The value of the company under both the cases is calculated as follows:

(Rs. in lakh)

Year		1	2	3	4	5
Cash flows	Before Merger	14	16.8	20.4	22.6	24.5
	After Merger	20.8	23.4	24.7	32.9	38.6
Continuing value	Before Merger					347.87
	After Merger					548.12
Present value factor		0.877	0.769	0.675	0.592	0.519
Present value of CF's & continuing value	Before Merger	12.28	12.93	13.77	13.38	12.72 + 169.68
	After Merger	18.25	18.01	16.67	19.48	20.05 + 267.30

Calculation of Continuing or Terminal Value

Before merger $= \dfrac{24.5(1.065)}{0.14-0.065} = \dfrac{26.09}{0.075}$

= Rs.347.87 lakh

After Merger $= \dfrac{38.6(1.065)}{0.14-0.065} = \dfrac{41.109}{0.075}$

= Rs.548.12 lakh

PV of cash flows

Before merger = 12.28 + 12.93 + 13.77 + 13.38 + (12.72 + 180.71) = Rs.245.79 lakh

After merger = 18.25 + 18.01 + 16.67 + 19.48 + 20.05 + 284.74 = Rs.377.2 lakh

Desired present value of cash flows = 245.79 x 1.18 = Rs.290.03 lakh.

Ownership position of Sonia Products Ltd.

$= \dfrac{290.03}{377.2} = 0.77$

$\therefore \text{ OP} = \dfrac{N_S}{N_S + ER_{NM}}$

$0.77 = \dfrac{180}{180 + ER \text{ x } 90}$

$0.77 = \dfrac{180}{180 + 90\,ER}$

ER = 0.6.

5. Multiples of the 3 companies are given below.

Company	Diffusion Ltd.	Scarlet Ltd.	Crimson Ltd.
MV/Sales	0.497	0.559	0.717
MV/EBIT	1.419	2.030	2.889
MV/BV	1.043	1.137	1.176

Average multiples can be taken as proxies to determine the market value of Sarika Ltd.

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Market value/Sales $= \dfrac{0.497 + 0.559 + 0.717}{3} = 0.591$

Market value/EBIT $= \dfrac{1.419 + 2.030 + 2.889}{3} = 2.113$

Market value/Book value $= \dfrac{1.043 + 1.137 + 1.176}{3} = 1.119$

Market Value of Sarika Ltd.

MV1 = 0.591 x 20.91 = 12.356

MV2 = 2.113 x 5.24 = 11.071

MV3 = 1.119 x 12.21 = 13.659

∴ Value of Sarika Ltd. = 1/3 (12.356 + 11.071 + 13.659) = Rs.12.362 million.

Part C: Applied Theory

1. The major types of mergers are:

Horizontal Mergers

A horizontal merger involves two firms operating and competing in the same kind of business activity. Forming a larger firm may have the benefit of economies of scale. However, the argument that horizontal mergers occur to realize economies of scale is not sufficient to be a theory of horizontal mergers. Although these mergers would generally benefit from large-scale operation, not all small firms merge horizontally to achieve economies of scale. Further, why do firms decide to merge at a particular time? Why do they choose a merger rather than internal growth?

The government for their potential negative effect on competition regulates horizontal mergers. Horizontal mergers decrease the number of firms in an industry and this may make it easier for the industry members to collude for monopoly profits. Horizontal mergers are also believed to potentially create monopoly power on the part of the combined firm enabling it to engage in anticompetitive practices. Whether horizontal mergers take place to gain from collusion or to increase monopoly power of the combined firm, in the presence of continuing government scrutiny of these mergers is an empirical question.

Vertical Mergers

Vertical mergers take place between firms in different stages of production operation. Reasons for which firms might want to be vertically integrated between different stages include technological economies, elimination of transaction costs, improved planning for inventory and production, reconciliation of divergent interests of parties to a transaction, etc. Anticompetitive effects have also been cited as both the motivation and the result for these mergers.

Conglomerate Mergers

Conglomerate mergers take place between firms engaged in unrelated types of business activities. Among these, three types have been distinguished. Product-extension mergers, which broaden the product lines of firms, involve mergers between firms in related business activities and may also be called concentric mergers. A geographic market-extension merger involves two firms whose operations have been conducted in non-overlapping geographic areas. Finally, pure conglomerate mergers, which involve unrelated business activities, would not qualify as either product-extension or market-extension mergers.

Two important characteristics define a conglomerate firm. First, a conglomerate firm controls a range of activities in various industries that require different skills in the specific managerial functions of research, applied engineering, production, marketing, etc. Second, mainly external acquisitions and mergers achieve diversification, not internal development.

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Financial Conglomerates

Financial conglomerates provide a flow of funds to each segment of their operations, exercise control, and are the ultimate financial risk takers. They undertake strategic planning but do not participate in operating decisions. Management conglomerates not only assume financial responsibility and control, but also play a role in operating decisions and providing staff expertise and services to the operating entities.

Managerial Conglomerates

Managerial conglomerates carry the attributes of financial conglomerates still further by providing managerial counsel and interactions on decisions and thus increase the potential for improving performance.

2. Joint ventures, as a strategy, are more complex and more formal than all other arrangements, such as licensing arrangement, etc. Joint ventures involve the creation of a third entity, representing the interests and capital of the partners involved. In a joint venture, both the partners contribute their own proportional amounts of capital, distinctive skills, managers, reporting systems, and technologies to the venture. The emphasis is on collaboration rather than mere exchange. While exchange simply involves obtaining something back for what you have put in, collaboration involves creation of new value.

A joint venture leads to the creation of a separate business enterprise. This, however, does not imply that the participants to the joint venture cease to exist. Joint venture participants continue to exist as separate firms. A joint venture may take the form of a partnership, a corporation, or any other form of business organization the participating firms might choose to select.

The following characteristics are taken into account while describing joint ventures:

Contribution of money, property, effort, knowledge, skill or other asset to a common undertaking, by the partners involved.

Joint property interest in the subject matter of the venture.

Right of mutual control or management of the enterprise.

Expectation of profit, or presence of "adventure".

Right to share in the profit.

Usual limitation of the objective to a single undertaking or ad hoc enterprise.

The scope and duration of joint ventures is, therefore, limited. Joint ventures involve only a small fraction of each participant's total activities. Each participant must contribute or offer something unique and of importance to the venture and, at the same time, provide a source of gain to the other participants of the venture.

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Paper II

Part D: Case Study

1. The current value of Blue Haven in condition of supernormal growth for 8 years and a constant growth of 10% thereafter:

$$V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1-b_c)}{k-g_c} \times \frac{(1+g_s)^{n+1}}{(1+k)^n}$$

= 5(0.6) (0.8) (1.09) $FVIFA_{(9\%,8yrs)}$ + 5 (0.6) (0.8) /(0.15 – 0.10) x $FVIF_{(9\%, 8\ yrs)}$ x 1.25

= 2.616 x 11.028 + 60 x 1.993 = Rs.148.429 million.

2. i. Value to after-tax earnings ratio for 10% growth in NOI after the supernormal growth:

$$\frac{V_0}{X_0(1-T)} = 148.429/5(1-0.4) = 49.48$$

ii. Value to after-tax earnings ratio

$$\frac{V_0}{X_0(1-T)}$$

Where V_0 = Value of the firm in condition of no growth after the period of supernormal growth.

$$= V_0 = X_0(1-T)(1-b_s)\sum_{t=1}^{n}\frac{(1+g_s)^t}{(1+k)^t} + \frac{X_0(1-T)(1+g_s)^{n+1}}{k(1+k)^n}$$

= 5 (0.6) (0.8) (1.09) FVIFA $_{(9\%,\ 8years)}$ + 5(0.6)/ (0.15) FVIF $_{(9\%,\ 8years)}$ (1.25)

= 2.616 x 11.028 + 25 x 1.993

= 28.849 + 49.825

= Rs.78.674 million

Therefore, the value to after-tax earnings ratio = 78.674/5(1 – 0.4) = Rs.26.22 million

From the above, it can be seen that in case of supernormal growth followed by a constant growth, the value to after tax earnings is more when compared to a firm with a supernormal growth followed by zero growth.

3. Sensitivity Analysis

	K	b_s	g_s	n	T	Valuation	2nd term as % of total
Initial case:	15%	0.2	25%	8	0.4	78.674	63
Change in b_s	15%	1.0	25%	8	0.4	49.825	100
Change in g	15%	1.0	30%	8	0.4	69.120	100
Change in k	20%	1.0	30%	8	0.4	48.124	100

Workings of the sensitivity analysis:

Change in bs = 5 (0.6) (0) (1.09) $FVIFA_{(9\%,\ 8\ yrs)}$ +5 (0.6)/(0.15) $FVIF_{(9\%,\ 8yrs)}$ x 1.25

= 0 + 49.825 = Rs.49.825 million

Change in g = 5 (0.6) (0) (1.13) $FVIFA_{(13\%,\ 8yrs)}$ + 5 (0.6)/(0.15) $FVIF_{(13\%,\ 8yrs)}$ x 1.3

= 0 + 69.120 = Rs.69.120 million

Change in k = 5 (0.6) (0) (1.08) $FVIFA_{(8\%,\ 8yrs)}$ + 5 (0.6)/(0.15) $FVIF_{(8\%,\ 8yrs)}$ x 1.3

= 0 + 48.124 = Rs.48.124 million.

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4. Blue Haven should carry out some strategic planning processes before it decides on its merger with Terminators Inc. The company should keep a continuous monitoring of the external environment. Monitoring should include analysis of economic, technological, political, social, and legal factors.

The diverse stakeholders of the organization, i.e., the individuals and groups which have an interest in the organization should be considered. Blue Haven should also carry out a study as to how the target company carries out its strategic thinking and planning processes.

Essential elements in Strategic Planning Processes:

i. The changes in the environment should be assessed.

ii. The capabilities and the limitations of the company should be evaluated.

iii. The stakeholders' expectations should be assessed.

iv. The goals and policies for the merger should be established.

v. Sensitivity to the critical external environment should be developed.

vi. Internal organization performance measurements need to be formulated.

vii. Long range, mid range and short range strategy programs should be formulated.

viii. The proceeding processes may be reviewed and evaluated.

5. Synergy in simple terms refers to the notion that the combination of two businesses can create greater shareholder value than if they are operated separately. The synergies can be operating and financial.

Operating synergies: Blue Haven can have operating synergies like economies of scale as well as economies of scope as a result of the merger with Terminator Inc.

Economies of scale are prominent in the manufacturing operations. Since Blue Haven is already into the manufacturing of heavy machineries (agricultural) and Terminators Inc. is into industrial machineries manufacturing, there would be economies of scale for both the companies. The per-unit expenses would decline for both the companies reflecting the improvement in labor productivity.

Economies of scope refer to the usage of a specific set of skills or a specific asset that is needed for the production of related products. Blue Haven can use the distribution network of Terminator for its agricultural machineries in the metro cities.

Financial synergies: The impact of mergers and acquisitions on the cost of capital of the acquiring firm or the newly formed firm resulting from a merger or acquisition. It includes the financial economies of scale and the opportunities being better matched with internally generated funds.

Financial economies of scale refer to the reduction in cost of capital resulting from lower securities and transaction costs. A firm with excess cash flows can avail better matching opportunities like lower borrowing costs when merged with company that generates cash flows insufficient to its needs.

Part E: Caselets

Caselet 1

1. A strategic alliance is simply a business-to-business collaboration where two or more corporates share resources, capabilities, or distinctive competencies to achieve some business purpose. Strategic alliances are formed for joint marketing, joint sales or distribution, joint production, design collaboration, technology licensing, and research and development. The key idea behind strategic alliances is to minimize risk while maximizing the leverage. Following are some of the examples of strategic alliances:

Toshiba-IBM: Sharing the $1 billion cost to develop a 64mb and 256mb memory chip factory. When the setup is over, this technology will be transferred to a new IBM plant in Virginia.

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Mitsui-GE: GE's power systems unit is obtaining finance for its Asian projects from Mitsui Bank (Japan). Mitsui's money and contacts in the region are helping GE exploit its technology there.

On the other hand, in a joint venture, two or more organizations set-up a separate, independent organization for strategic purposes. Such partnerships are normally focused on a specific market objective. They may continue for few months/years, and often involve a cross-border relationship. One firm may buy a percentage of the stock in the other partner, but not a controlling share.

2. Besides profit, the other factors that enthuse corporates to go for strategic alliance are:

- to achieve economies of scale, scope and speed
- to increase market penetration
- to enhance competitiveness in domestic and global markets
- to enhance product development
- to develop new business opportunities through new products and services
- to expand market development
- to boost exports
- for diversification
- to create new businesses
- to bring down costs.

Caselet 2

1. Preliminary negotiations with the vendor need to address key issues such as:

- Purchase of shares or assets and the business
- The amount of purchase consideration
- Types of purchase consideration
- Role of the vendor after legal formalities
- A mutually convenient date for negotiating the letter of intent or an agreement to agree.

2. Both the parties (acquirer and target) to the M&A transaction often sign a document, which is called as Letter of Intent (LoI). The Letter of Intent precisely records the most important terms and conditions of the transaction. It avoids misunderstanding in the later period of the transaction regarding the material terms of the deal.

The usual Letter of Intent is non-binding. If not drafted tactfully, it may unintentionally become a binding contract. A LoI usually helps in negotiating the key terms. Without a Letter of Intent, it is easier for one of the parties to demand for a renegotiation of the basic terms of the transaction, even though the terms were agreed to during earlier stages of the negotiations. In short, it defines the broad contours within which the negotiations are to be carried out.

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Caselet 3

1. There are three key strategic choices for going international:

Multi-domestic

The company decentralizes operational decisions and activities to each country in which it operates and customizes its products/services to suit that market. For example, for years, US auto manufacturers maintained decentralized foreign units that produced cars tailored to different nations. General Motors produced the Opel in Germany and the Vauxhall in Great Britain.

Global

The organization provides standardized products and uses integrated operations. To cite an example, Ford (the US car maker) is considering its 'Contour' as a car for global markets – one that can be manufactured and sold in any country.

Transnational

The organization seeks the best of both the multidomestic and global strategies by globally integrating operations while customizing its products/services to the local market.

Globally linked electronic communications can help integrate operations while flexible manufacturing helps corporates to manufacture different versions of products from the same assembly line, tailoring them to varied markets and customers. This gives more option in identifying facilities to take advantage of cheaper land, labor and other factors of production.

There are several techniques for going international. Each of them involves a trade-off between the degree of risk and the amount of foreign control that the company's strategists are willing to permit. Usually, corporates start with exporting, progress to licenses, then to franchising, then to direct investing. As the firm gets success at each level, it moves to the next level. If it faces any difficulties at any of these stages, it may stop going ahead with those moves. If it faces any extreme problems that adversely affect its bottomline, the company may go back from its plan of doing business in a foreign market.

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Model Question Paper V

Time: 6 Hours **Total Points: 200**

Paper I

Time: 3 Hours **Points: 100**

Part A: Basic Concepts (30 Points)

Answer all the questions. Each question carries one point.

1. Which of the following is a/are motive(s) behind mergers of the first wave?

a. Monopoly.

b. Economies of scale.

c. Technological advancements.

d. Reduction in transportation costs.

e. All of the above.

2. Which of the following theories of existence of a firm hypothesize(s) that the costs involved in a market transacting lead to formations of firms to reduce such costs?

a. Production cost efficiency theory.

b. Firm as a nexus of contracts.

c. Transaction cost efficiency theory.

d. Both (a) and (c) above.

e. None of the above.

3. Firm "A" mails a letter to the directors of the takeover target Firm "B" announcing the acquisition proposal and requiring the directors to make a quick decision on the bid. Which of the following strategies is the above activity referring to?

a. Proxy contest.

b. Bear hug.

c. Tender offer.

d. Standstill agreement.

e. None of the above.

4. What is the free cash flow on a net basis of a firm having a net income of Rs.1,80,000, after a tax interest of Rs.30,000 and an investment of Rs.1,00,000?

a. 50,000.

b. 80,000.

c. 1,00,000.

d. 1,10,000.

e. 1,50,000.

5. Which of the following statements refer(s) to the discounted cash flow valuation?

a. It estimates the value of the asset to the present value of the expected future cash flow on that asset.

b. It estimates the value of the assets by looking at the pricing of comparable assets relative to a common variable such as earnings, cash flows, sales, etc.

c. It uses option pricing models to measure the value of the assets that have similar characteristics as an option.

d. Both (a) and (b) above.

e. All of the above.

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6. Firm "A" has 50,000 outstanding shares. Its EPS for the next year is estimated to be Rs.5. The average price earnings ratio in the industry is 3. What is the market price of the firm?

a. Rs.2

b. Rs.5

c. Rs.10

d. Rs.15

e. Data insufficient.

7. From the above data, what is the market value of the firm?

a. Rs.2,50,000

b. Rs.5,00,000

c. Rs.7,50,000

d. Rs.10,00,000

e. None of the above.

8. The ratio of the market value of a firm's shares to the replacement costs of the assets represented by these shares is called the

a. H-ratio

b. Q-ratio

c. P/E-ratio

d. K-ratio

e. None of the above.

9. The problem of agency costs gives rise to

a. Hubris Hypothesis

b. Free Cash Flow Hypothesis

c. Managerialism

d. Information

e. None of the above.

10. The major difference(s) between spin-off and divestiture is that

i. Spin-off results in gains of 1 to 2 percent to selling firms on an average

ii. Divestiture is usually to another company

iii. Divestitures are not readily predictable.

a. Only (i) above

b. Only (ii) above

c. Only (iii) above

d. Both (i) and (ii) above

e. Both (ii) and (iii) above.

11. Which of the following statements is false regarding a joint venture agreement?

a. Joint ventures have a limited scope and duration.

b. Joint ventures involve only a small fraction of each participant's total activities.

c. Sharing of information or assets is limited in a joint venture.

d. No competitive relationship exists between participants after the venture arrangement.

e. Each partner provides a source of gain to the other participant.

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12. Which of the following cannot be a motive behind joint ventures?

a. Complex learning.

b. Tax aspects.

c. Synergy.

d. Agency problem.

e. Diversification.

13. Which of the following types of MLP is sometimes called a Spin-off?

a. Start-up MLP.

b. Roll-out MLP.

c. Roll-up MLP.

d. Liquidation MLP.

e. None of the above.

14. ESOPs that are essentially stock bonus plans which are required to invest primarily in the securities of the employer firm are known as

a. Leveraged ESOP

b. Non-leveraged ESOP

c. Leveragable ESOP

d. Tax Credit ESOP

e. All of the above.

15. Debt that has secondary claim on assets of the LBO target is called

i. Secured Debt

ii. Subordinated Debt

iii. Unsecured Debt

iv. Senior Debt.

a. Both (i) and (iv) above

b. Both (i) and (ii) above

c. Both (ii) and (iv) above

d. Both (ii) and (iii) above

e. All of the above.

16. Which of the following control mechanisms may be adopted by a board in a situation where the whole industry is suffering?

a. Check whether the management is making mistakes.

b. Set-up an external challenge to shake up the management and the board.

c. Force the CEO to retrench workers.

d. Undertake a complete management turnover.

e. Both (c) and (d) above.

17. Firms experiencing complete management turnovers are characterized by

a. Poor performance relative to their own industries

b. Poor industry performance

c. Lack of proper monitoring by large shareholders

d. Opposing views within the board

e. The board being completely unresponsive to company's problems.

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18. Which of the following is true?

a. The merger activity is negatively correlated with the rates of growth of the nominal GNP.

b. Higher long-term cost of capital results in more number of conglomerate mergers.

c. Pure conglomerate activities are significantly positively correlated with the size of the risk premium.

d. Conglomerate mergers are weakly correlated with the measure of monetary stringency.

e. The existence of financial synergy is far more important for the product merger than for the pure conglomerate merger.

19. Which of the following variables are used in merger and takeover models?

i. Bargaining.

ii. Atomistic versus finite shareholders.

iii. Degree of synergy between target and bidder.

iv. Effects of costs of investigation on actions of bidders.

v. Form of tender.

a. (i), (iii) and (iv) above.

b. (i), (iii) and (v) above.

c. (i), (ii) and (iii) above.

d. (i), (iii), (iv) and (v) above.

e. All of the above.

20. Which of the following is true about an anti-greenmail amendment?

a. It is a voluntary contract in which the stockholder who is bought out agrees not to make further investments in the target company during a specified period of time.

b. A target firm repurchases through private negotiation a large block of its stock from an individual shareholder or a subset of shareholder at a premium.

c. It prohibits or discourages the targeted repurchase by requiring the management to obtain the approval of a majority or supermajority of non-participating shareholders prior to repurchase.

d. It is a separation provision of an employment contract that compensates managers for the loss of their jobs in case of any change of control.

e. None of the above.

21. Which of the following is an antitakeover charter amendment where a potential target firm may choose to change its state of incorporation into one where the laws are more favorable for implementing takeover defenses?

a. Fair price provisions.

b. Consent solicitations.

c. Supermajority amendments.

d. Reincorporation.

e. Classified boards.

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22. Identify the incorrect statement.

a. Cumulative voting allows each shareholder to cast as many votes as the number of shares held for each director position

b. Cumulative voting allows the shareholders to cast, for each share held, as many votes as the number of directors to be elected

c. Cumulative voting allows minority shareholders to cumulate their votes and cast them for a select number of directors

d. Cumulative voting increases the voting likelihood of a change in control

e. None of the above.

23. Which of the following antitakeover provisions requires the acquirer to pay minority shareholders at least a fair market price for the company's stock?

a. Dual capitalization.

b. Supermajority provision.

c. Fair price provision.

d. Standstill agreement.

e. Greenmail.

24. Which of the following terms refers to a firm that consents to purchase a large block of Target Company's stock without taking over the company by itself?

a. White Knight.

b. White Squire.

c. Pac Man Defense.

d. Shark Repellant.

e. Shark Watcher.

25. Which of the following is true with reference to free cash flow?

a. It does not include non-operating income.

b. When defined on a gross basis, it includes depreciation.

c. It reflects the cash flow available to the suppliers of equity capital after taking care of all other outflows.

d. It is affected more by the profitability rate than the investment rate.

e. It will be negative for firms undertaking capital expenditure projects.

26. Which of the following is a cash flow method for determining the continuing value of a firm?

a. Replacement cost method.

b. Price earning method.

c. Market to book ratio method.

d. Value driver method.

e. Cost of capital method.

27. Which of the following is not true regarding junk bonds?

a. The use of junk bonds became popular during the fourth merger wave.

b. Junk bonds refer to bonds which are rated below the investment grade or are unrated.

c. The yield on junk bonds is significantly lower when compared to that of investment grade bonds.

d. The popularity of junk bonds gave birth to the phenomenon of leveraged buyouts.

e. None of the above.

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28. Which of the following is a/are motive(s) for divestitures?

a. Raising capital.

b. Curtailment of losses.

c. Strategic realignment.

d. Both (a) and (b) above.

e. All of (a), (b) and (c) above.

29. Consider the following situation:

ABC Ltd. created a new subsidiary whose shares are distributed on a pro rata basis to existing shareholders of the parent company without any cash payment by the parent and there is separation of control.

The above situation is a

a. Spin-off

b. Split off

c. Split up

d. Equity carve out

e. Divestiture.

30. An exchange ratio that is determined based on the current earnings per share of the merging companies fails to take into account

a. The differential risks associated with the earnings of the two companies

b. The gains in earnings arising out of merger

c. The difference in the growth rate of earnings of the two companies

d. Both (a) and (b) above

e. All of (a), (b) and (c) above.

Part B: Problems (50 Points)

Solve all the problems. Points are indicated against each problem.

1. Alpha Ltd. is considering the purchase of Beta. During the past year Beta had a net income of Rs.10 lakh and paid a dividend of Rs.1 lakh. The earnings and dividends of Beta are expected to grow at an annual rate of 25% a year for 6 years after which they will grow at 6% per year. Beta retains 60% of its net income. The required return on an investment with the characteristics of Beta stock is 15%.

What is the maximum that Alpha Ltd. could pay for Beta to earn at least a 15% return on investment?

(6 points)

2. Company B is the bidder and is acquiring company T (Target). The following information is available.

	B	T
Net income after taxes	25,000	10,000
Number of shares outstanding	10,000	5,000
P/E ratio	35	10

The bidder company intends to pay 25% premium over the market for the target.

Calculate

a. The EPS of B and T before the acquisition.

b. The market price per share of B and T before the acquisition.

c. The combined total net income of BT after the acquisition (assume that there is no synergy).

d. EPS of the combined firm.

e. Is the equity accretive or dilutive for the shareholders of B and T with respect to EPS?

f. The effects on the new market prices.

(1 + 1 + 1 + 3 + 2 + 2 = 10 points)

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3. The summarized balance sheet of Magnus Ltd. as on 31st December 2001 is given below:

Liabilities	Amount (Rs.)	Assets	Amount (Rs.)	
Equity share capital (20,000 shares @10 each)	2, 00,000	Fixed Assets	1, 90,000	
13 % Preference share capital	10,000	Investments	10,000	
Retained earnings	40,000	Current Assets:		
10% Debentures	30,000	Inventories	50,000	
Current liabilities	20,000	Debtors	40,000	
		Bank	10,000	1,00,000
	3,00,000			3,00,000

Mercury Ltd. is considering the acquisition of Magnus. The purchase consideration consists of: (i) to issue 13% debentures for Rs.33,000, to redeem 10% debentures of Magnus Ltd. (ii) to issue 12% Convertible preference shares for Rs.10,000 to enable Magnus to redeem its preference share of Rs.10,000. (iii) 15,000 equity shares of Mercury Ltd. to be issued at its current market price (Rs.15) (iv) Mercury Ltd. would meet dissolution expenses (estimated to cost Rs.3,000).

The break-up figures of eventual disposition by Magnus Ltd. of it's assets which are not required and liabilities are: investments (Rs.12,500) debtors (Rs.35,000), inventories (Rs.42,500) and payment of current liabilities Rs.19,000.

The fixed assets acquired are expected to generate yearly operating CFAT of Rs.70,000 for 6 years. It is estimated that fixed assets of Magnus Ltd. would fetch Rs.30,000 at the end of the 6th year. The firm's cost of capital is 15%. As a financial consultant, comment on the financial prudence of the merger decision of A Ltd.

(12 points)

4. From the following information, you are required to compute the value of M/s Nandini Ltd. using the comparable firms approach;

	Rs.
Sales	125 cr.
Profit after tax	20 cr.
Book value	50 cr.

The valuer feels that 50% weightage should be given to earnings in the valuation process; sales and book value may be given equal weightages; the valuer has identified 3 firms which are comparable to the operations of Nandini Ltd.

Particulars	Sine Ltd. Rs. cr.	Cos Ltd. Rs. cr.	Tan Ltd. Rs. cr.
Sales	95	105	135
Profit after tax	15	22	25
Book value	48	55	64
Market value	115	145	220

(8 points)

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5. Prime Enterprises is engaged in the business of manufacturing textiles. Its current financials are as follows:

	(Rs. in crore)
Sales	250
Operating expenses	75
EBDIT	175
Depreciation	25
EBIT	150
Tax@35%	52.5

The current level of its net fixed assets is Rs.140 crore. The corresponding level of net current assets stand at Rs.25 crore.

The sales of the firm are expected to grow at the rate of 12% per year for the next 5 years. During the same period, the operating expenses are expected to increase at the rate of 9% per annum. Depreciation is to be charged @ 10% of the net fixed assets at the beginning of the year. To finance this expansion, Prime Enterprises will be making the following investments:

Year	Investment in fixed assets (Rs. in crore)
1	28
2	5
3	12
4	18
5	0

Throughout the five year period, the net current assets will remain at 10% of the net fixed assets. All the investment will be made at the beginning of the respective years.

The tax rate will continue to be at 35%. The post-tax non-operating cash flows will be as follows:

Year	Non-operating cash flows (Rs. in crore)
1	8
3	6
4	18

The post-tax cost of debt is 10% for the firm. The cost of equity is 16%. The market value of debt is 70 crore and the market value of equity is Rs.150 crore.

From the sixth year onwards the free-cash flow is expected to grow @10% per annum.

Calculate the value of Prime Enterprises.

(14 points)

Part C: Applied Theory (20 Points)

Answer the following questions. Points are indicated against each question.

1. Unless determined efforts are made to climb the value chain, the success of Indian companies like Infosys, Wipro and TCS will be short lived. Moving up the value curve is easier said than done. The process involving radical changes in several aspects of organization is rough and risky. It needs enormous amount of managerial vision, courage and grit. Change may be broadly classified into gradual and radical change. Define and differentiate them. How can a company identify the need for it to change.

(10 points)

2. The success of a merger lies in the hands of the management. Discuss.

(10 points)

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Paper II

Time: 3 Hours **Points: 100**

Part D: Case Study (50 Points)

Read the case carefully and answer the following questions.

1. What is an ESOP? Compare ESOPs with the public offering of stock.

(5 points)

2. a. What are the cash flow implications of ESOPs?

b. How are ESOPs treated in the Balance Sheets?

(10 points)

3. Compare the three methods of raising capital through equity, debts and ESOPs in terms of cumulative taxes paid. Which method would Grashim Ltd. follow to raise the required funds?

(25 points)

4. How can an ESOP be used as an anti-takeover defense by Grashim Ltd. if another company gives an unsolicited Rs.25 per share bid?

(10 points)

Grashim Ltd., a pharmaceutical company with an equity capital of Rs.25 million, with face value of Rs.10 as on 20x0, needs funds to the extent of Rs.15 million for the purpose of expanding its activities. It has three ways of raising the capital:

i. Issuing equity

ii. Taking long-term loan

iii. Through leveraged ESOP financing.

The estimated operating income for the coming four years:

(Rs. in million)

20x1	20x2	20x3	20x4
10	11	12	13

The company had no other operating expenses other than interest on debts of 10 percent in case of debt financing. The debt repayments would be Rs.3, 3.5, 4 and 4.5 million at the end of the next 4 years respectively.

The ESOP data

(Rs. in million)

	20 x 1	20 x 2	20 x 3	20 x 4
ESOP payroll	12	14	16	18
Maximum principal repayment (25% of payroll)	3	3.5	4	4.5
Amount owed	12	8.5	4.5	–

Grashim Ltd. received an offer from Mahim Ltd. for a share-for-share exchange for each of the outstanding shares. Mahim Ltd. offered Rs.20 per share for the Grashim shares trading at Rs.15 per share.

Part E: Caselets (50 Points)

Caselet 1

Read the caselet carefully and answer the following questions.

1. What do you feel are the reasons for the failure of most mergers and acquisitions?

(5 points)

2. What steps can the company adopt to make the acquisition a success?

(5 points)

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In its search for ways to face global competition, India Inc. is waking up to the new millennium imperative of mergers and acquisitions. This is hardly surprising as stiff competition is, in a sense, implicit in any bid to integrate the national economy with the global one. The ongoing process of liberalization has exposed the unproductive use of capital by both public and private corporate sectors. Consolidation through mergers and acquisitions is considered as one of the best ways of restructuring to effectively face the competitive pressures. To have any significant presence in the national and global markets, a minimum critical mass is essential. This will allow sustainable cost advantage, make cross border transactions possible, and lead to growth and enhancement of shareholder value. In short, everything seems to be shouting "bigger is better". But is that really true? In practice, few takeovers have worked well. Most have been fraught with difficulties. Of the mergers and acquisitions in the Indian corporate sectors, none can highlight that the mantra of corporate strategy by mergers is working. If it is the problem of wages and pay scales on one side it is the difficulty of adaptability that is making mergers a difficult proposition. Clearly, companies seem to be underestimating the challenges of transition especially on the human resource front.

It can thus be inferred that mergers and acquisitions do not signal automatic profits. These days it can be a long and bitter struggle before such deals begin to make financial sense. It used to be that mergers and acquisitions were like weddings – occasions to celebrate. They still are – for those who cash in and make a killing, and for those whose jobs and grades are protected. For the large number of those who do not get to join the party, it's time to look for another job.

Caselet 2

Read the caselet carefully and answer the following questions.

1. Has Singh's strategy of diversification created or destroyed value? Why?

(7 points)

2. Do you think ITC needed to diversify through acquisitions to gain access to the leading-edge technological know-how? What other approaches could the company have used?

(6 points)

3. Identify the ways in which ITC's diversification strategy can add value to its established automobile business.

(5 points)

4. Develop an acquisition program for Singh, whereby he can minimize failures.

(5 points)

For years, ITC enjoyed a well-earned reputation as one of the world's premier makers of high quality luxury cars. During the mid 1990s, however, under the leadership of a new CEO, Ashok Singh, ITC embarked on a dramatic strategic change. Singh transformed ITC from a focused company producing luxury cars and trucks under the "Diplomat" label into India's largest industrial conglomerate with annual revenues in the Rs.60 billion range. He achieved this by acquiring a number of companies including electronics and consumer goods manufacturer PCL and aerospace companies Bamania and Gamma Airlines. ITC subsequently combined these two companies into Bharat Airlines which is currently having 40% of the market share.

The logic underlying Singh's diversification strategy was based on a number of factors. First, he believed that the intensity of rivalry in the automobile industry would increase with so many players like Ford and Hyundai setting up their own facilities. This would make it difficult for the company to hold on to its differential advantage. Second, Singh reasoned that in this new competitive environment the companies that would come out on top would be those that are able to incorporate leading-edge technology into their cars before rivals did. Third, he believed that by acquiring electronics and aerospace business, ITC could gain access to such leading-edge technological know-how.

However, Singh's plans are yet to bring the gains that he so boldly predicted for them. Since, the mid 1990s the company's profits have stagnated. PCL was losing money when ITC bought it and is yet to show a profit; similarly Bharat Airlines has turned out to be a perennial money loser. As a result, by the late 1990s the luxury car business, even though it made up only 40% of ITC's total revenues, accounted for 90% of its profits; to make matters worse, there are signs that the car business may be running into trouble with ITC succumbing to its arch rival Maruti Udyog who has sold more cars than it has this year.

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Singh claims these are short-term problems and that in the long run the diversification strategy will pay-off. Others are not so sure. Many analysts thought that Singh had an exaggerated view of the potential for sharing technology among the aerospace, auto and electronic business. They were also puzzled as to why a diversified conglomerate had to be built to share such know-how.

Critics of Singh's policies also point out to the serious morale problems that have begun to emerge. In addition, there is the perception that Singh's focus on diversification has sapped capital and diverted top management's attention from the company's core competency.

Caselet 3

Read the caselet carefully and answer the following questions.

1. Can Global Paints use buy-back as a defense strategy? How?

(8 points)

2. What are the other defense strategies which can be used by Global Paints to ward off the takeover threat from PCI?

(9 points)

The week beginning September 15, 1998 was a busy one for Arjun Ghosh, 54, the Vice-Chairman and spokesperson of the 1000 crore Global Paints. On his arrival in Delhi from Mumbai, he plunged into a series of discussions with bureaucrats and politicians and met a couple of media persons in the afternoon and took the last flight back home. Ghosh was back in Delhi in two days to hold talks with the members of the Board of the 700-crore PCI India and the bureaucrats, trying to convince everybody that an alliance between Global Paints and PCI India Ltd. was just not possible. He emphasized the point that the government should not clear the purchase deal for a 10% stake in Global Paints by PCI. Meanwhile, Aditya Pancholi, MD of PCI, is busy trying to convince FIPB and the Union Ministry that PCI wants to play the role of a strategic investor in Global Paints and that the deal confirms to FIPB norms. In response, Ghosh and other co-promoters of Global Paints are looking for alternatives to raise their combined equity stake (41% at present) to over 50% to stall PCI's entry.

The present norms pertaining to foreign direct investment state that any proposal for linking foreign equity holdings should be accompanied by a resolution of the Board of Directors of the Indian company and a letter of consent from the Indian partner.

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Model Question Paper V

Suggested Answers

Paper I

Part A: Basic Concepts

1. *(e)* All the given alternatives are different motives of the merger activities that took place in the first merger wave.

2. *(c)* The transaction cost efficiency theory of the firm hypothesizes that the costs involved in market transacting adopts organizational innovations.

3. *(b)* Bear hug is a takeover strategy in which the acquirer without warning mails a letter to the directors of the target announcing an acquisition proposal and demanding a quick decision.

4. *(d)* Free cash flow = Net income + After tax interest – Investment

   Free cash flow = 1,80,000 + 30,000 – 1,00,000 = Rs.1,10,000.

5. *(a)* The discounted cash flow approach is based on the time value concept where the value of any asset is the present value of its expected future cash flows.

6. *(d)* Market price per share = Expected earnings per share x P/E ratio

   = 5 x 3 = Rs.15.

7. *(c)* Market value = Number of shares x MPS = 50,000 x 15 = Rs.7,50,000.

8. *(b)* Q ratio is the ratio of the market value of a firm's shares to the replacement costs of the assets represented by these shares. It is used to determine whether the firm is undervalued.

9. *(b)* Agency costs associated with conflicts between managers and shareholders over the pay-out of free cash flow is a major cause for giving rise to free cash flow hypothesis in a takeover activity.

10. *(b)* Spin-off and divestitures are similar in terms of cash received. However, divestiture is usually to another company. Hence, the control over the assets sold is relinquished by the parent seller. Further, the trading of the subsidiary stock is not initiated.

11. *(d)* Since, the sharing of information and/or assets required to achieve the objective need not extend beyond the joint venture i.e., it is limited to only a particular project, the participants' competitive relationship is not affected by the joint venture.

12. *(d)* Agency problem arises due to the conflict between principal (shareholder) and agent (manager) in which the agent has an incentive to act in his own self-interest because he bears lesser than the total costs of his actions. Agency problem may lead to a takeover and not a joint venture.

13. *(b)* Roll-out MLP is also called Spin-off MLP. Roll-out MLPs are formed by a corporation's contribution of operating assets in exchange for general and limited partnership interests in the MLP, followed by a public offering of limited partnership interests by the corporation of the MLP, or both.

14. *(b)* Non-leveraged ESOPs that are essentially stock bonus plans (where a firm contributes a specified number of shares of its common stock into the plan annually) are required to invest primarily in the securities of the employer firm.

15. *(d)* The unsecured debt is also referred to as subordinated debt and junior subordinated debt is debt that has a secondary claim of assets used for collateral. As a result of its inferior claim on assets, this debt usually has higher interest cost.

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16. *(b)* In a situation where the whole industry is suffering, it is difficult for the board to assess and judge whether the management has made any mistakes or not. The board may even be reluctant to retrench or lay-off the workers or to go for a complete turnover of management. In such circumstances, an external set-up to shake up the board and the management in order to enforce shareholder wealth maximization, is usually preferred by many managers.

17. *(a)* Firms experiencing complete turnover of management are characterized by poor performance relative to their own industries rather than poor industry performance.

18. *(c)* Using the ratio of the returns on BAA to AAA corporate bonds as a measure of risk premium, and of bankruptcy cost in general, one can conclude that the pure conglomerate activity is significantly positively correlated with the size of the risk premium.

19. *(e)* All the given alternatives are variables used in the models of the merger and takeover processes.

20. *(c)* Anti-greenmail amendments restrict a firm's ability to repurchase a raider's shares at a premium. By removing the incentives for greenmail, companies believed that they were making themselves less attractive as potential takeover targets.

21. *(d)* Reincorporation involves the creation of a subsidiary in the new state. Changes in the state of incorporation can thus make a hostile takeover of the firm more difficult.

22. *(a)* A straight voting allows each shareholder to cast votes equal to the number of shares held for each director position, whereas in cumulative voting right the shareholder is entitled to cast for each share held as many votes as the number of directors to be elected. All the other alternatives are true about cumulative voting.

23. *(c)* A fair price provision is a modification of the corporation's charter that requires the acquirer to pay minority shareholders at least a fair market price for the company's stock. Fair price provisions are usually activated when the bidder makes an offer.

24. *(b)* In a white squire defense the target company seeks to implement a strategy that will preserve the target company's independence. A white squire generally buys convertible preferred stock.

25. *(b)* Gross cash flow includes non-cash items like depreciation and other non-cash charges but excludes tax.

26. *(d)* Alcar model identifies seven value drivers. Cash flow from these value drivers is computed to identify the firm valuation.

27. *(c)* The yields on junk bonds are significantly higher than that of investment grade bonds.

28. *(e)* Divestiture involves outright sale of a portion of the firm to outsiders with the motives of raising capital, strategic realignment and curtailing the losses.

29. *(a)* In spin-off, a new company is formed to takeover a particular unit of the company. Shares of the new company are issued at a pro rata basis to the existing shareholders.

30. *(e)* Exchange ratio takes into account only the earnings of two companies, number of issued shares and the market price per share of the acquiring company.

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Part B: Problems

1. Using the dividend growth valuation model

$$S_0 = \sum_{t=1}^{n} \frac{D_0(1+g_s)^t}{(1+k_e)^t} + \frac{Y_0(1-b_c)(1+g_c)^{n+1}}{(k_e-g_c)(1+k_e)^n}$$

$$= S_0 = \sum_{t=1}^{6} \frac{1(1+0.25)^t}{(1+0.15)^t} + \frac{10(1-0.6)(1+0.25)^{6+1}}{(0.15-0.06)(1+0.15)^6}$$

$= 1.087\ [((1.087)^6 - 1) / 0.087)] + 19.07/(0.09 \times 2.313)$

$= 1.087\ (7.466) + 91.59 = 8.12 + 91.59 =$ Rs 99.71 lakh.

2.

		Bidder	Target
a.	Earnings per share (NI/number of shares)	25,000/10,000 = Rs.2.5	10,000 /5,000 = Rs.2
b.	Market price per share P/E x EPS	35 x 2.5 = Rs.87.5	10 x 2 = Rs.20

c. Total Earnings = Net income of bidder + Net income of Target

= 25,000 + 10,000 = Rs.35,000

d. **EPS of the Combined Firm**

Calculation of number of shares issued by B

Bidder had 10,000 shares

Bidder pays 125 % x 20 = 25 per share of T

Bidder pays a total of 25 x 5,000 = Rs.1,25,000

Bidder needs to issue 1,25,000/87.5

= 1,428 shares of B to cancel shares of T

Total earnings = Rs.35,000

Number of shares 10,000 + 1,428 = 11,428 shares

Earnings per share 35,000/11428 = Rs.2.63

e.

	Bidder	Target
EPS before the acquisition	2.50	2
EPS after the acquisition	2.63	0.75*
Accretion	0.13	
Dilution		1.25

* T had 5,000 shares with Earnings per share = 2

Now, T will have 1,428 shares with earnings per share = 2.63 (1,428/5,000) = Re.0.75

f.

	Bidder	Target
Market price before the acquisition	87.5	20
Market price after the acquisition**	92.05	26.29
Accretion	4.55	6.29

Note ** B's new market price = P/E x EPS = 35 x 2.63 = Rs.92.05

T's new market price = 92.05 (1,428/5,000) = Rs.26.29.

3. i. **Cost of Acquisition**

(Amount in Rs.)

10% debentures	33,000
13% convertible preference shares	10,000
Equity share capital (15,000 x Rs.15)	2,25,000
Dissolution cost of Magnus	3,000
Payment of current liabilities	19,000
Less: realized proceeds from sale of assets	
Investments 12,500	
Debtors 35,000	
Inventories 42,500	90,000
Less bank balance of Magnus Ltd.	10,000
Cost of Acquisition	1,90,000

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ii. **Benefits of Acquisition**

Cash flow after tax (t = 1 to 5)	70,000
CFAT (t = 6) Rs.70,000 + 30,000	1,00,000

iii. **Determination of NPV of merger decision**

Year	CFAT	PV factor at 15% Cost of capital	Total present value (Rs.)
1 to 5	70,000	3.352	2,34,640
6	1,00,000	0.432	43,200
			2,77,840
Less cost of acquisition			1, 90,000
Net present value			87,840

iv. **Mercury Ltd. is expected to benefit from the merger of Magnus Ltd. as the NPV is positive.**

4. The valuation multiples of the comparable firms are as follows:

Particulars	Sine	Cos	Tan	Avg
Price/Sales Ratio	1.21	1.38	1.62	1.403
Price/Earnings Ratio	7.67	6.59	8.80	7.69
Price/Book Value Ratio	2.39	2.63	3.43	2.82

By using the above multiples, the value of Nandini Ltd. is calculated as follows:

Particulars	Multiple Avg	Parameter Rs. cr.	Value Rs. cr.
Price/Sales	1.403	125	175.375
Price/Earning	7.690	20	153.800
Price/Book Value	2.820	50	141.000

The weightages to P/S ratio, P/E ratio and P/V ratio are 1, 2 and 1 respectively. Thus, the weighted average value will be

$$\frac{(175.375 \times 1) + (153.8 \times 2) + (141 \times 1)}{4} = \text{Rs.}155.99 \text{ cr.}$$

5. Calculation of gross cash flow for the explicit forecast period.

Year	1	2	3	4	5
Sales	280	313	351	393	440
Operating expenses	82	89	97	105	115
EBDIT	198	224	254	288	325
Depreciation**	17	16	15	16	14
EBIT	181	208	239	272	311
Taxes	63	73	84	95	109
NOPLAT	118	136	155	177	202
Gross cash flow (NOPLAT + Dep.)	135	152	170	193	216

**** Depreciation is calculated as follows**

Year	1	2	3	4	5
Net fixed assets at the end of the previous year	140	151	140	137	139
Additions at the beginning of the year	28	5	12	18	0
Total assets	168	156	152	155	139
Depreciation for the year	17	16	15	16	14
Net fixed assets at the end of the year	151	140	137	139	125

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Calculating the Free Cash Flows

Year	1	2	3	4	5
Gross Cash Flow	135	152	170	193	216
Gross Investment	20	4	11	19	–2
Free Cash Flow from Operations	115	148	159	174	218
Non-Operating Cash Flow	8	0	6	18	0
Free Cash Flow	123	148	165	192	218

Calculation of Cost of Capital

$$= \left(\frac{70}{220} \text{ x } 0.1\right) + \left(\frac{150}{220} \text{ x } 0.16\right) = 14.09\%$$

Present Value of Free Cash Flow

Year	Free Cash Flow	PV Factor	Present Value
1	123	0.8765	107.76
2	148	0.7682	113.37
3	165	0.6734	111.02
4	192	0.5902	113.34
5	218	0.5173	112.68
			558.00

Calculating the Gross Investment

Investment in Net Current Assets

Year	1	2	3	4	5
Total net current assets	17	16	15	16	14
Net current assets at the end of the previous year	25	17	16	15	16
Investment in net current assets	–8	–1	–1	+1	–2

Investment in Fixed Assets

Year	1	2	3	4	5
Investments	28	5	12	18	0

Gross Investment

Year	1	2	3	4	5
Gross investment	20	4	11	19	–2

Discounted Continuing Value

$$\left(\frac{218 \text{ x } 1.10}{0.1409 - 0.10}\right) = 5{,}856.90 \text{ x } \left(\frac{1}{1.1409}\right)^5 = 3{,}029.91 \text{ cr.}$$

Value of the Firm = Discounted cash flow + Discounted continuing value

= 558 + 3,029.91= 3,587.911 cr.

Market Value of Debt = Rs.70 cr.

Value of Equity = Rs.3587.91 – 70 cr.

= Rs.3517.911 cr.

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Part C: Applied Theory

1. Gradual Change

It is a change that occurs over a prolonged period with minor fluctuation in intensity. It can involve many people or just a few. But it is most effective as an unending organization wide change program to include quality of products and process, reduce cost and raise productivity. Even small improvement sometime results in huge savings.

Radical Change

It is a sudden, dramatic change with market effects – for example a company may reverse it's strategy (say charging premium for quality to charge lowest price) to tap a new market. The change may be commercial or structural, all though the two tend to go together

Radical change is often large scale, as big risky stock market investment may either gain heavily or loose heavily than smaller markets. So, a successful organization earns huge profit from radical change.

However, when an organization is successful it is hard for the people to accept a radical change.

Before making a radical change of any kind, the responsibility rests with the top management to plan thoroughly, think through the options in detail to minimize risk. The organization may identify the demand for the changes as follows:

Conducting customer survey

This helps to find out the things that matter them most and compare the customer's options about the competitor product. This would indicate the changes required to have greater impact on customer satisfaction, for example surveys show that in telephone service, customers responded as follows:

30% complained of faulty equipment,

30% complained of bad sales service

15% each complained about billing problem and slow and poor repairing and 10% complained of inefficient installation.

Bad sales service and faulty equipment accounted for most customer dissatisfaction so these areas tend to be the main focus of changed telecom industry.

Conducting employee survey

Organizations depend on employees for success. High degree of employee satisfaction is required if a company has to perform at it's best.

Dissatisfied employees would quit the firm or show poor performance. Seeking the options of employees and involving them in identifying the need for change would increase the morale and motivate them to improve the quality of the processes.

Quality control methods

They can be used by the organisations to check weather the products meet the customer's expectations. Any discrepancy could be used by the organization as a basis for initiating a change. However, management should remember that there is no point in improving the quality of unwanted aspects of products.

2. With companies needing the economies of scale and competitive advantage that these joint ventures bring, the "desire to acquire" is expected to continue. There have been waves of merger and acquisition activity throughout the nineteenth and twentieth centuries. The most recent wave during the 1990s is now referred to as the era of strategic mergers and acquisitions. "The reasons companies today are so involved in M&A activity are complex. Some need to create global reach in order to fill in the needed gaps in technology or in product lines".

Despite favorable economic conditions and solid reasons for companies to embark on bigger and better M&As, the bad news is that over half fail to reach their stated outcome. The top five reasons are: incompatible cultures, inability to manage the acquired company, unable to implement change, absence of synergy or it was overestimated, and finally, not anticipating foreseeable events.

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The rate of success has an important impact not only on a company's near-term results, but also on its long-term viability, and ability to continue to do deals. With a successful M&A under its belt, the market views management as capable of growing through mergers and acquisitions without dilution. But if the management does bad deals or does not implement them very well, they become a target for the next wave of consolidation.

The framework for any merger and acquisition can be described as a cycle with four distinct stages the management should look into for a successful merger. The cycle comprises:

- Pre-deal Stage: Finding compatible business ventures and partners.
- Due Diligence Stage: Ensuring the deal is sound and establishing the value proposition.
- Integration Planning: Defining the blueprint for all aspects of the merged entities.
- Implementation: Executing the merger integration plan for the new enterprise and measuring and reporting progress.

There are many reasons for mergers to fail. The "Right Study" highlighted eight of them:

a. Exit of key talent

b. Lowered overall productivity and individual performance

c. Incomplete or infrequent communications

d. Placement errors

e. Management denial or inattention to key workforce problems

f. Lack of direction during implementation

g. Ignoring the "culture fit"

h. Poor management of remaining employees.

Of these reasons, (a) has a special resonance for the staffing industry. In a milieu that traffics in the management of people, the key talent at an agency is more important than executives in other industries. Many times it is their contacts and relationships that constitute the value of the acquisition.

Also, looking at the list, (g) can be said to influence almost every other reason.

The management needs to understand the above reasons and take precautions to overcome them accordingly.

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Paper II

Part D: Case Study

1. An Employee Stock Option Plan (ESOP) is a form of stock bonus plan that invests primarily in the securities of the sponsoring employer firm. An ESOP may be used to raise new capital for the companies. The plan can be used to purchase companies and also in divestitures and sell-offs.

Though, both ESOP and public offering of stock deal with the raising of capital, still there lie some differences. There is no floatation cost involved while raising capital through the ESOP whereas, floatation costs are present in a public offer of stock. Moreover, the firm receives a tax deduction on the ESOP contribution, although the pension plan contributions and wages that were paid before the contribution were already tax-deducted.

2. a. ESOPs affect the cash flows positively. In case of stock contribution to ESOP, there is no cash outlay. Let us take a Rs.5,000 stock contribution to ESOP, the company will get a Rs.5,000 tax deduction that improves its cash flows by the amount of tax savings. Still, we cannot conclude that the cash flow benefits are costless. The benefits may either be partially or fully offset by the dilution in the equity holdings of the non-ESOP stockholders in the form of lower earnings per share.

b. The debt incurred by the leveraged ESOP is to be recorded on the liability side of the balance sheet of the company under the heading "secured loans". The corresponding reduction in the shareholder equity is reflected in the financial statements of the company as a charge against the profits. The ESOP shares are taken as outstanding shares for the purpose of earnings per share. Now, the post-ESOP earnings per share reflect the dilution of equity.

3. **Equity Financing**

(Rs. in million)

Year	0	1	2	3	4
Income statement					
Operating income		10	11	12	13
Interest expense		–	–	–	–
Income before tax		10	11	12	13
Income tax @40%*		4	4.4	4.8	5.2
Net income		6	6.6	7.2	7.8
Cumulative net income			12.6	19.8	27.6
Capitalization					
Shareholders' equity	25				
	15				
Total capital	40	46	52.6	59.8	67.6
Cumulative taxes paid		4	8.4	13.2	18.4

Raise Rs.15 million by selling 1.5 shares @ Rs.10 per share. The total capital rises to Rs.40 million. Percent ownership 62.5% **of Rs.67.6 = Rs.42.25.

* Taxes at 40% assumed.

**Original no. of shares/new total x 100 or, 25/40 x 100 = 62.5%

Debt Financing

(Rs. in million)

Year	0	1	2	3	4
Income statement					
Operating income		10	11	12	13
Interest expense		1.5	1.2	0.85	0.45
Income before tax		8.50	9.80	11.15	12.55
Income taxes at 40%		3.40	3.92	4.46	5.02

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(Rs. in million)

Year	0	1	2	3	4
Net income		5.10	5.88	6.69	7.53
Cumulative net income		5.10	10.98	17.67	25.20
Repay principal on debt		3.00	3.50	4.00	4.50
Capitalization					
Long-term debt	15	12	8.5	4.5	----
Shareholders' equity	25	30.10	35.98	42.67	50.20
Total capital	40	42.10	44.48	47.17	50.20
Principal repayment		3.00	3.50	4.00	4.50
Balance owed		12.00	8.50	4.50	----
Cumulative taxes paid		3.40	7.32	11.78	16.80

Percent ownership of original shareholders = 100%

Cash flow = Cumulative net income minus debt repayment

= 25.2 – 15 = Rs.10.20 million

Leveraged ESOP Financing

(Rs. in million)

Year	0	1	2	3	4
ESOP Data					
ESOP payroll		12	14	16	18
Maximum principal repayment (25% of payroll)		3	3.5	4	4.5
Amount owed		12	8.5	4.5	–
Income statement					
Operating income		10	11	12	13
ESOP contribution – Interest		1.5	1.2	0.85	0.45
ESOP contribution – Principal		3	3.5	4	4.5
Income before taxes		5.50	6.3	7.15	8.05
Income taxes @40%		2.2	2.52	2.86	3.22
Net income – tax books		3.3	3.78	4.29	4.83
Net income – actual *		6.3	7.28	8.29	9.33
Cumulative net income (actual)		6.3	13.58	21.87	31.2
Capitalization					
Long-term debt	15	12	8.5	4.5	–
Shareholders' equity	25	31.3	38.58	46.87	56.20
ESOP obligation	(15)	(12)	(8.5)	(4.5)	–
Net equity = book value	10	19.3	30.08	42.37	56.20
Total capital (long-term debt + Net equity)	25	31.30	38.58	46.87	56.20
Shares outstanding	2.50	2.80	3.15	3.55	4.00
Share additions		0.30	0.35	0.40	0.45
Percent original ownership	100%	89%	79%	70%	63%
ESOP capital cumulative shares		0.30	0.65	1.05	1.50
ESOP % of shareholders' equity owned		11%	21%	30%	37%
ESOP equity at book value**		3.44	8.10	14.06	21.8
Cumulative taxes paid		2.20	4.72	7.58	10.80

*Net Income in tax books + ESOP contribution (Principal)

**ESOP % of shareholders' equity owned x shareholders' equity.

From the above calculations, it can be seen that the cumulative taxes paid are the minimum in case of ESOP financing. Hence, the firm should resort to ESOP financing for raising Rs.15 million.

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4. The parent company after acquiring 20% of the shares in the target company has to give a public offer to purchase another 20% of the shares from the market so as to take over the target company. However, the target company besides the other defensive measures, may also opt for the ESOP to defend itself against the takeover.

Once the takeover code is triggered, the target company can establish an ESOP, which may act as its own white squire. The combined holdings of stock in the ESOP and the so called "loyal" block of stocks can prevent the acquiring company from reaching the target shares.

Part E: Caselets

Caselet 1

1. Failure of most of the acquisitions can be linked to certain factors which are discussed below.

Firstly, very few firms have the ability to manage diverse business. The temptation to stray into unrelated areas that appear exotic and very promising is often strong. However, the reality is that such forays are often very risky.

Secondly, deal-making proceedings are usually frenzied and emotional for the CEO and the rest of the top team and this clouds managerial vision. Most of the times, the process is dominated by an obsession with establishing a price and structure that will allow the transaction to go through.

Lack of detailed, comprehensive analysis may be cited as another reason for failure of many acquisitions. In many cases, the models used in the valuation process lack analytical rigor.

Yet, another reason is that acquirers often seriously underestimate the amount of investment in management resources – as well as capital that will be involved in implementation.

A clash of cultures – especially in cross-border mergers – is another cause. A demoralized staff anxious about lay-offs and redundancies is yet another cause of failed mergers.

And finally, it should be remembered that even the best strategy can be ruined by poor implementation. A precondition for a successful acquisition is the proper post-acquisition integration of two different organizations. This is a complex task which may not be handled well.

2. Historically, acquirers have viewed proposed deals from either a strategic or a financial standpoint. Only then have they considered the organizational change. However, a failure to plan adequately for integration before the deal will lead to unpleasant surprises. Certain questions like, how to tackle integration? How fast to go? What changes need to be made? How to retain the changes? What can be done to ensure that key people – many of whom will not be involved in the formative stages of putting the deal together – commit fully to the new venture?, should be addressed well before the deal is through.

A disciplined acquisition program consists of the following steps:

a. Manage the pre-acquisition phase
b. Screen candidates
c. Evaluate the remaining candidates
d. Determine the mode of acquisition
e. Negotiate and consummate the deal
f. Manage the post-acquisition integration.

A good starting point of a merger and acquisition program for an acquiring company is to institute a thorough valuation of the company itself. This will enable the acquiring company to understand well its strengths and weaknesses and deepen the acquirer's insights into the structure of its industry. Armed with this knowledge, managers of the acquiring company can indulge in brainstorming to come up with worthwhile acquisition ideas.

The ideas generated in the brainstorming sessions and the suggestions received from various quarters will have to be filtered. The screening will narrow down the list of candidates to a fairly small number. Each company should be examined thoroughly and valuation should be as realistic as possible. After selecting the company, the firm should

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decide on the mode of acquisition. The choice of the mode of acquisition is guided by the regulations governing them, the time frame the acquirer has in mind, the resources the acquirer wishes to deploy, the degree of control the acquirer wants to exercise and the extend to which the acquirer is willing to assume contingent and hidden liabilities. After the deal is negotiated and consummated, the post-acquisition phase has to be handled carefully. Two guidelines should be borne in mind: problems should be anticipated and solved as early as possible; people should be treated with dignity and concern.

Caselet 2

1. Corporate-level strategy is concerned with two main questions: (i) what business areas should a company participate in, so as to maximize its long-term profitability/growth and add value to shareholders; and (ii) what strategies should it use to enter and exit from business areas. In choosing business areas to compete in, a company has several options. The main ones are to vertically integrate into adjacent business or to diversify into a number of different business areas. When in the mid 1990s, ITC reduced its dependence on core competency in the automobile business by diversifying into new areas namely aerospace and electronics, it chose to do so through acquisitions rather than new ventures. However, as the case shows, this strategy has not added value but seems to have dissipated value for customers and shareholders.

To add value, a corporate strategy should enable a company or its divisions to perform one or more of the value-creation functions at a lower cost or in a way that allows for differentiation and a premium price, in the process achieving a distinctive competency and competitive advantage, passing on these benefits to its shareholders. This does not seem to have happened at ITC and hence the erosion in value.

The following factors have added to the loss of value:

a. Apparent lack of co-ordination between the various businesses with profit making divisions having to support loss making divisions.

b. Cultural barriers in the companies acquired could also have been a cause.

c. It looks as though diversification has led to an increase in the risk level at least in the variability of earnings, rather than being used as a tool to reduce risk.

d. Greater focus on size rather than competence.

e. Failure to integrate acquisitions well.

2. It is apparent that the diversification has not been undertaken with a view to acquire new leading edge technologies as there are many options which will prove to be more suitable and less expensive for the company. It is true that Mr. Singh has ventured into high technology areas of electronics and aerospace but high technology in such areas will prove to be of little use for the company's automobile business. The company should have opted for entering into a joint venture with a technology partner to lay hands on the latest technology. Alternatively it could have bought the technology at a price. The investment in R&D facilities to develop the required technology on its own could also be considered. Diversifying business for the sake of technology appears to be an irrational choice.

3. Diversification as a business strategy can create value in 3 ways:

a. By acquiring and restructuring poorly managed enterprises:

In the case though PCL fits the description, even after the acquisition, the company does not seem to be managed well.

b. By transferring competencies among the business:

Singh tried to achieve this objective also by trying to transfer the benefit of technology to all his businesses. But this again does not seem to have an added value. An acquisition is a costly mode of transferring technology anyway when less costlier methods of licensing technology and getting into joint ventures are available.

c. Economies of scale and scope:

Sharing of costs, increase in capacity, etc. add value by cost leadership. However, such value creation is possible only when there are significant commonalities between the value creation fractions as is not the case here.

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4. As the chances of failure in an acquisition can be high, it should be planned carefully. It pays to develop a disciplined acquisition program consisting of the following steps:

a. Manage the pre-acquisition phase

b. Screen the candidates

c. Evaluate the remaining candidates

d. Determine the mode of acquisition

e. Negotiate and consummate the deal

f. Manage the post-acquisition integration.

Caselet 3

1. It is possible for Global Paints to use buy-back as a defense strategy. In fact, it may be a very conducive alternative for the promoters of the company. The promoters already hold 41% stake in the company. A buy-back of 20% shares of the company will boost their stake to 51.25% thereby removing all fears of a hostile takeover. The company has to, however, meet the following regulatory conditions to effect the buy-back.

i. Pass a special resolution to obtain its shareholder's approval for buy-back and complete the process within 15 months from the date of resolution.

ii. Ensure that enough reserves are available for the buy-back as the shares can be bought from free reserves and share premium reserves.

iii. The D/E ratio should not decline to less than 2:1 after the buy-back.

iv. The company should not come out with a new equity issue for a period of 12 months after the buy-back.

v. The Board should certify that the company will not be insolvent for a period of one year after the buy-back.

2. The following defense strategies may be identified:

a. Set off moves to increase promoters' stake to 51%.

b. Inform the Government of India that FIPB clearance cannot be given without Board resolution.

c. Demonstrate promoters' commitment to shareholders through their involvement in the company.

d. Buy-back shares.

e. Advise financial institutions to support against PCI.

f. Make a counter offer to prevent a sell-out by Global's shareholders.

g. Announce exorbitant post-takeover severance packages (Golden Parachutes).

h. Poison Puts (including a provision in debenture issues to protect bondholders against takeover related issues where put is triggered by a takeover).

i. Use employee stock options exercisable in favor of Global.

j. Find a White Knight.

k. Poison Pills (Making Global less attractive by acquisition, leverage, etc.)

l. Pac man defenses (Threatening PCI enter a hostile bid after accumulating a sizable amount of stock and offer Global's holding back to promoters (PCI) at a substantially higher price).

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