Final
Group IV
Paper 20: STRATEGIC PERFORMANCE MANAGEMENT & BUSINESS VALUATION
(SYLLABUS – 2016)

Section A: Strategic Performance Management

1. Multiple choice questions with justification wherever necessary:

(i) The financial performance analysis which is undertaken by the outsiders of the business, namely investors, credit agencies, government agencies, and other creditors who have no access to the internal records of the company, is called:
(a) Internal analysis;
(b) External analysis;
(c) Horizontal Analysis;
(d) Vertical Analysis.

(ii) Which of the following is a cause for corporate distress?
(a) Fraud by Management;
(b) Working Capital Problems;
(c) Mismanagement;
(d) All of the above.

(iii) Six Sigma has two key methodologies. These are:
(a) DMAIC and DMADV;
(b) DMADC and DMADV;
(c) DMAIC and DMADC;
(d) DMAII and DMADV.

(iv) Who has prompted the phrases, "Zero Defects"?
(a) Walter A. Shewhart;
(b) Philip Crosby;
(c) Peter Drucker;
(d) F. W. Taylor.

(v) One of the exceptions of Law of Demand is described by Sir Robert Giffen. He said that even though the price, for necessary goods rise, the demand for them will not decrease. These goods are called:
(a) Prestigious goods;
(b) Speculative goods;
(c) Giffen goods;
(d) None of the above.

(vi) If the proportionate change in the price is more than the proportionate change in the demand, it is called:
(a) Relatively inelastic demand;
(b) Relatively elastic demand;
(c) Perfectly Inelastic demand;
(d) Perfectly Elastic Demand.

(vii) A French economist Cournot analyzed a special case of competitive business behaviour with only two firms in an Industry. It is called:
(a) Oligopoly
(b) Monopoly
(c) Duopoly
(d) None of the above.

(viii) The risk which is primarily influenced by the level of financial gearing, interest cover, operating leverage, and cash flow adequacy, is called:
(a) Financial risk;
(b) Business risk;
(c) External risk;
(d) Exchange risk.

(ix) Which of the following are not the element/ parameter of NCAER model of corporate distress prediction?
(a) Net worth position
(b) Outstanding liability position
(c) Net working capital position
(d) Cash profit position.

(x) The type of benchmarking, which is concerned with the development of core competencies that will help sustained competitive advantage, is called:
(a) Global Benchmarking
(b) Strategic Benchmarking
(c) Internal Benchmarking
(d) Competitive Benchmarking.

Answer:

(i) (b).

The financial performance analysis which is undertaken by the outsiders of the business, namely investors, credit agencies, government agencies, and other creditors, who have no access to the internal records of the company, is called External analysis.

(ii) (d).

The causes for corporate distress can be — Technological Causes, Working Capital Problems, Economic Distress, Mismanagement, Fraud by Management etc.

(iii) (a).

DMAIC (Define, Measure, Analyze, Improve, Control) is used to improve an existing business process and DMADV (Define, Measure, Analyze, Design, Verify) is used to create new product or process designs for predictable, defect-free performance.

(iv) (b).
Philip Crosby prompted the phrases, "Zero Defects". It does not mean mistakes never happen, rather than there is no allowable number of errors built into a product or process and that it is to be got right first time.

(v) (c).
According to the Law of demand, when the price rises, demand decreases and vice-versa. But, according to Sir Robert Giffen, even though the price for necessary goods rise, the demand for them will not decrease. These goods are called Giffen goods.

(vi) (a).
If the proportionate change in the price is more than the proportionate change in the demand, it is called relatively inelastic demand. The demand is less elastic. This is one type of price elasticity of demand.

(vii) (c).
A special case of competitive business behaviour with only two firms in an industry is called duopoly. It is assumed that each member in this two – firm industry produces a homogeneous product, treats the rivals output as given and maximizes profit.

(viii) (a).
Financial risk is primarily influenced by the level of financial gearing, interest cover, operating leverage, and cash flow adequacy. The financial risk depends on the capital structure and method of financing adopted by the company.

(ix) (b).
The NCAER Study on Corporate Distress Prediction prescribed three elements/ parameters for predicting the stages of corporate sickness, such as: (i) Cash profit position (a profitability measure) (ii) Net working capital position (a liquidity measure) and (iii) Net worth position (a solvency measure).

(x) (b).
Strategic Benchmarking helps to develop a vision of the changed organizations. It will develop core competencies that will help sustained competitive advantage.

2.(a) What is Performance Management? Write down the components of Performance Management.
(b) "Financial performance analysis can be classified into different categories on the basis of material used and modes operandi". — Explain.

Answer:
(a) Performance Management:

Performance management is a continuous process of identifying, measuring and developing performance in organizations by linking each individual's performance and objectives to the organization's overall mission and goals.

Performance management is ongoing. It involves a never-ending process of setting goals and objectives, observing performance, and giving and receiving ongoing coaching and feedback. Performance management requires managers to ensure that employees' activities and outputs are congruent with the organisation's goals and, consequently, help the organization to gain a competitive business advantage. Performance Management therefore creates a direct link between employee performance and organizational goals, and makes the employees' contribution to the organization explicit.

Performance management is a comprehensive, continuous and flexible approach to the management of organisations, teams and individuals which involves the maximum amount of dialogue between those concerned. Performance management focuses mainly on the achievement of results.

Components of Performance Management:

1. **Performance Planning:** Performance planning is the first crucial component of any performance management process which forms the basis of performance appraisals. Performance planning is jointly done by the appraiser and the reviewer in the beginning of a performance session. During this period, the employees decide upon the targets and the key performance areas which can be performed over a year within the performance budget, which is finalized after a mutual agreement between the reporting officer and the employee.

2. **Performance Appraisal and Reviewing:** The appraisals are normally performed twice in a year in an organization in the form of mid reviews and annual reviews which is held at the end of the financial year. In this process, the appraise first offers the self filled up ratings in the self appraisal form and also describes his/her achievements over a period of time in quantifiable terms. After the self appraisal, the final ratings are provided by the appraiser for the quantifiable and measurable achievements of the employee being appraised. The entire process of review seeks an active participation of both the employee and the appraiser for analyzing the causes of loopholes in the performance and how it can be overcome.

3. **Feedback on the Performance followed by personal counseling and performance facilitation:** Feedback and counseling is given a lot of importance in the performance management process. This is the stage in which the employee acquires awareness from the appraiser about the areas of improvements and also information on whether the employee is contributing the expected levels of performance or not. The employee receives an open and a very transparent feedback and along with this the training and development needs of the employee is also identified. The appraiser adopts all the possible steps to ensure that the employee meets the expected outcomes for an organization through effective personal counseling and guidance, mentoring and representing the employee in training programs which develop the competencies and improve the overall productivity.

4. **Rewarding good performance:** This is a very vital component as it will determine the work motivation of an employee. During this stage, an employee is publicly recognized for good performance and is rewarded. This stage is very sensitive for an employee as this may have a direct influence on the self esteem and achievement orientation. Any contributions duly recognized by an organization helps an employee in coping up with the failures successfully and satisfies the need for affection.

5. **Performance Improvement Plans:** In this stage, fresh set of goals are established for an employee and new deadline is provided for accomplishing those objectives. The employee is clearly communicated about the areas in which the employee is expected to improve and a stipulated deadline is also assigned within which the employee must

show this improvement. This plan is jointly developed by the appraise and the appraiser and is mutually approved.

6. **Potential Appraisal:** Potential appraisal forms a basis for both lateral and vertical movement of employees. By implementing competency mapping and various assessment techniques, potential appraisal is performed. Potential appraisal provides crucial inputs for succession planning and job rotation.

(b) Financial performance analysis can be classified into different categories on the basis of material used and modes operandi as under:

A. **Material used:** On the basis of material used financial performance can be analyzed in following two ways:
   1. **External analysis:** This analysis is undertaken by the outsiders of the business namely investors, credit agencies, government agencies, and other creditors who have no access to the internal records of the company. They mainly use published financial statements for the analysis and as it serves limited purposes.
   2. **Internal analysis:** This analysis is undertaken by the persons namely executives and employees of the organization or by the officers appointed by government or court who have access to the books of account and other information related to the business.

B. **Modus operandi:** On the basis of modus operandi financial performance can be analyze in the following two ways:
   1. **Horizontal Analysis:** In this type of analysis financial statements for a number of years are reviewed and analyzed. The current year's figures are compared with the standard or base year and changes are shown usually in the form of percentage. This analysis helps the management to have an insight into levels and areas of strength and weaknesses. This analysis is also called Dynamic Analysis as it based on data from various years.
   2. **Vertical Analysis:** In this type of Analysis study is made of quantitative relationship of the various items of financial statements a particular date. This analysis is useful in comparing the performance of several companies in the same group, or divisions or departments in the same company. This analysis is not much helpful in proper analysis of firm's financial position because it depends on the data for one period. This analysis is also called Static Analysis as it based on data from one date or for one accounting period.

3.(a) "Supply Chain Management encompasses the planning and management of all activities involved in sourcing, procurement, conversion and logistics management activities." — Define Supply Chain Management in this context and also state the components of Supply Chain Management.

(b) What are the factors to be considered when analyzing customer profitability?

Answer:

(a) Supply Chain Management:

Supply Chain Management encompasses the planning and management of all activities involved in sourcing, procurement, conversion and logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, Supply chain Management integrates supply and demand management within and across companies.

The Supply Chain Management Program integrates topics from manufacturing operations, purchasing, transportation, and physical distribution into a unified program.

In a typical supply chain, raw materials are procured and items are produced at one or more factories, shipped to warehouses for intermediate storage, and then shipped to retailers or customers. Consequently, to reduce cost and improve service levels, effective supply chain strategies must take into account the interactions at the various levels in the supply chain. The supply chain , which is also referred to as the Logistic Network, consists of suppliers, manufacturing centers, warehouses, distribution centers, and retail outlets, as well as raw material, work –in- process inventory, and finished product that flow between the facilities.

Thus, we can define the Supply Chain Management as follows:
Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufactures, warehouses and stores, so that merchandise is produce and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.

Component of Supply Chain Management:

There are five basic components of Supply Chain Management, as follows:

1. Plan: This is the strategic portion of SCM. You need a strategy for managing all the resources that go toward the meeting customer demand for your product and services.
2. Source: Choose the suppliers that will deliver the goods and services you need to create your product. Develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships.
3. Make: This is the manufacturing step. Schedule the activities necessary for production, testing, packaging and preparation for delivery.
4. Deliver: This is the part that many insiders refer to as logistics. Coordinate the receipt of orders from customers, develop a network of warehouses, pick carriers to get products to customers and set up an invoicing system to receive payments.
5. Return: The problem part of the supply chain. Create a network for receiving defective and excess products back from customers and supporting customers who have problems with delivered products.

(b) Customer profitability analysis has become an important new management accounting tool. Customers utilize company resources differently; thus customer costs vary from one customer to another. The following issues/ factors should be considered when analyzing customer profitability:

- How to develop reliable customer revenue and customer cost information;
- How to recognize future downstream costs of customers;
- How to incorporate a multi-period horizon in the analysis; and
- How to recognize different drivers of customer costs.

This requires a broader examination of the costs associated with customer service. For example, post- sale customer service costs must be included in any analysis of customer costs. Some customers require substantially more post-sale service than others. In addition, future environmental liabilities related to the sales of current products are additional downstream costs that must be included. With management's increased focus on customers, this analysis can provide forward- looking information about individual customers and customer segments and more broadly examine both the revenues and Costs related to customer transactions. Revenues can vary among customers due to variations in volume levels, and differences in price structures, products and services.

Costs can also vary depending on how customers use the company's resources such as marketing, distribution, and customer service. Unless a complete analysis of the benefits and costs of customer relationships is undertaken, companies will unknowingly continue to service unprofitable customers. Only after a thorough analysis of the costs and benefits, a firm can decide which customers to service and strategically price its products and services.

4.(a) What is Operative Customer Relationship Management?
(b) State the objectives for using Customer Relationship Management applications.

Answer:

(a) Operative Customer Relationship Management:

Operative CRM mainly supports the actual contact with customers conducted by front office workers and general automation of business processes including sales of products, services and marketing. All communication with the customer is tracked and stored in the database and if necessary it is effectively provided to users (workers). The advantage of this approach being the possibility to communicate with various employees using various channels but creating the feeling that customer is being taken care of by just one person. It can also minimize the time that the worker has to spend typing the information and administrating (the data is shared). This allows the company to increase the efficiency of their employees work and they are then able to serve more customers.

(b) Objectives for using Customer Relationship Management applications:

I. To support the customer services
II. To increase the effectiveness of direct sales force.
III. To support of business to business activities.
IV. To support of business to consumer activities.
V. To manage the call center.
VI. To operate the In- bound call centre.
VII. To operate the Out - bound call centre.

5.(a) Discuss the potential impact of Computers and MIS on different levels of management.
(b) Write about the four perspectives of Balanced Score Card (BSC).

Answer:

(a) The potential impact of computers on top-level management may be quite significant. An important factor which may account for this change is the fast development in the area of computer science. It is believed that in future computers would be able to provide simulation models to assist top management in planning their work activities. For example, with the help of a computer it may be possible in future to develop a financial model by using simulation technique, which will facilitate the executives to test the impact of ideas and strategies formulated on future profitability and in determining the needs of funds and physical resources.

Futurists believe that top management will realize the significance of techniques like Simulation, Sensitivity Analysis and Management Science. The application of these techniques to business problems with the help of computers would generate accurate, reliable, timely and comprehensive information to top management. Such information would be quite useful for the purpose of managerial planning and decision-making. Computerized MIS will also influence in the development, evaluation and implementation of a solution to a problem under decision making process.

Potential Impact of Computers and MIS on middle management level will also be significant. It will bring a marked change in the process of their decision-making. At this level, most of the decisions will be programmed and thus will be made by the computer, thereby drastically reducing the requirement of middle level managers. For example, in the case of inventory control system, computers will carry records of all items in respect of their purchase, issue and balance. The re-order level, re-order quantity etc., for each item of material will also be stored in computer after its predetermination. Under such a system, as soon as the consumption level of a particular item of material will touch reorder level, computer will inform for its purchase immediately.

The impact of Computers and MIS today at supervisory management level is maximum. At this level, managers are responsible for routine, day-to-day decisions and activities of the organization which do not require much judgment and discretion. In a way, Supervisory manager's job is directed more towards control functions, which are highly receptive to computerization. Potential impact of computers and MIS on supervisory level will completely revolutionize the working at this level Most of the controls in future will be operated with the help of computers. Even the need of supervisory managers for controlling the operations will be substantially reduced. Most of the operations/activities now performed manually will be either fully or partially automated.

(b) Four perspectives of Balanced Score Card (BSC):

The objectives and measures view organizational performance from four perspectives - (A) Financial, (B) Customers, (C) Internal Business Process, and (D) Learning and Growth.

(A) Financial: The financial perspective serves as the focus for the objectives and measures for the objectives and measures in the other scorecard perspectives. This perspective is concerned for profit of the enterprises. Under this perspective the focus will be on financial measures like operating profit, ROI, residual income, economic value added concept, revenue growth, cost reduction, asset utilization etc. These financial measures will provide feedback on whether improved operational performance is being translated into improved financial performance.

(B) Customer: This perspective captures the ability of the organization to provide quality goods and services, the effectiveness of their delivery, and overall customer service and satisfaction. Needs and desires of customers have to be attended properly because customer pay for the organization's cost and provided for its profits. This perspective typically includes several core or genetic measures that relate to customer loyalty and the result of the strategy in the targeted segment. They include market share, customer retention, new customer acquisition, customer satisfaction and customer profitability.

(C) Internal Business Processes: This perspective focuses on the internal business results that lead to financial success and satisfied customer. To meet organizational objectives and customers' expectations, organizations must identify the key business processes at which they must excel. Key processes are monitored to ensure that outcomes will be satisfactory. The principal internal business processes include the following:

(1) Innovation processes for exploring the needs of the customers.

(2) Operation processes with a view to providing efficient, consistent and timely delivery of product/ service.

(3) Post service sales processes.

(D) Learning and Growth: This perspective looks at the ability of employees, the quality of information systems, and the effects of organizational alignment in supporting accomplishment of organizational goals. Processes will only succeed if adequately skilled and motivated employees, supplied with accurate and timely information, are driving them. In order to meet changing requirements and customer expectations, employees may be asked to take on dramatically new responsibilities, and may require skills, capabilities, technologies, and organizational designs that were not available before. The learning and growth perspective identifies the infrastructure that the business must build to create long-term growth and improvement. There will be focus on factors like employee capability, employee productivity, employee satisfaction, employee retention.

6.(a) What are the difficulties in implementation of benchmarking?

(b) List the objectives of MIS (Management Information System) in different levels of management.

Answer:

(a) Difficulties in implementation of benchmarking:

1. Time consuming: Benchmarking is time consuming and at times difficult. It has significant requirement of staff time and Company resources. Companies may waste time in benchmarking non-critical functions.
2. Lack of management Support: Benchmarking implementation requires the direct involvement of all managers. The drive to be best in the industry or world cannot be delegated.
3. Resistance from employees: It is likely that their maybe resistance from employees.
4. Paper Goals: Companies can become pre-occupied with the measures. The goal becomes not to improve process, but to match the best practices at any cost.
5. Copy-paste attitude: The key element in benchmarking is the adaptation of a best practice to tailor it to a company's needs and culture. Without that step, a company merely adopts another company's process. This approach condemns benchmarking to fail leading to a failure of bench marking goals.

(b) Objectives of MIS (Management Information System):

- To provide the managers at all levels with timely and accurate information for control of business activities
- To highlight the critical factors in the operation of the business for appropriate decision making
- To develop a systematic and regular process of communication within the organization on performance in different functional areas
- To use the tools and techniques available under the system for programmed decision making
- To provide best services to customers
- To gain competitive advantage
- To provide information support for business planning for future.

7.(a) State the objectives and benefits of Materials Requirement Planning or MRP I.
(b) Write short note on:
(i) MOLAP
(ii) ROLAP.

Answer:

(a) Objectives of Materials Requirement Planning or MRP I: The basic objectives of Materials Requirement Planning are as follows:

1. It determines the quality and timing of finished goods demanded.
2. It determines time phased requirements of the demand for materials, components and sub-assemblies over a specified planning time horizon.
3. It computes the inventories, work-in-progress batch sizes and manufacturing and packing lead times.
4. It controls inventory by ordering components and materials in relation to orders received rather than ordering them from stock level point of view.

Benefits of Materials Requirement Planning or MRP I: The benefits of a successful Materials Requirement Planning system include:

- Significantly decreased inventory levels and corresponding decreases in inventory carrying costs.
- Fewer stock shortage, which cause production interruptions and time-consuming schedule juggling by managers.
- Increased effectiveness of production supervisors and less production chaos.
- Better customer service - an increased ability to meet delivery schedules and to set delivery dates earlier and more reliably.
- Greater responsiveness to change. MRP gives manufacturing a better feel for the effects of economic swings and changes in woodcut demand can be translated into schedule changes quickly.
- Closer coordination of the marketing, engineering, and finance activities with the manufacturing activities.

(b) MOLAP (Multidimensional On-Line Analytical Processing):

MOLAP is a "multi-dimensional online analytical processing".'MOLAP' is the 'classic' form of OLAP and is sometimes referred to as just OLAP. MOLAP stores this data in an optimized multidimensional array storage, rather than in a relational database. Therefore it requires the pre-computation and storage of information in the cube - the operation known as processing. MOLAP tools generally utilize a pre- calculated data set referred to as a data cube. The data cube contains all the possible answers to a given range of questions. MOLAP tools have a very fast response time and the ability to quickly write back data into the data set.

ROLAP (Relational On-Line Analytical Processing): ROLAP works directly with relational databases. The base data and the dimension tables are stored as relational tables and new tables are created to hold the aggregated information. Depends on a specialized schema design, this methodology relies on manipulating the data stored in the relational database to give the appearance of traditional OLAP's slicing and dicing functionality. In essence, each action of slicing and dicing is equivalent to adding a "WHERE" clause in the SQL statement. ROLAP tools do not use pre-calculated data cubes but instead pose the query to the standard relational database and its tables in order to bring back the data required to answer the question. ROLAP tools feature the ability to ask any question because the methodology does not limit to the contents of a cube. ROLAP also has the ability to drill down to the lowest level of detail in the database.

8.(a) "Benefits from ERP is of two kinds, tangible and intangible." — Discuss all these benefits of ERP (Enterprise Resource Planning).

(b) What are the reasons for failure of ERP system in an organisation?

Answer:

(a) Benefits from ERP are of two kinds, tangible and intangible. Tangible benefits are those benefits which can be quantified in monetary terms and intangible benefits cannot be quantified in monetary terms but they do have a very positive and significant business impact.

Tangible Benefits:

1. Lowering the cost of products and services purchased
2. Significant paper and postage cost reductions
3. Improve the productivity of process and personnel
4. Inventory reduction
5. Lead time reduction
6. Reduced stock obsolescence
7. Faster product/service lookup and ordering saving time and money
8. Automated ordering and payment, lowering payment processing and paper costs

Intangible Benefits:

1. Can reach more vendors, producing more competitive bids
2. Accurate and faster access to data for timely decisions
3. Saves enormous time and effort in data entry
4. More controls thereby lowering the risk of misutilization of resources
5. Facilitates strategic planning

6. Uniform reporting according to global standards
7. Improved customer response
8. Increases organizational transparency and responsibility.

(b) An organization cannot reap desired benefits from ERP system under the following circumstances:

- Lack of effective project management
- Inability to resolve issues and make decisions in timely manner
- Resources not available when needed
- Perceived or real lack of executive support
- Software fails to meet business needs
- Under estimated levels of Change Management
- Improper communication
- Insufficient end user training
- Failure in gap analysis
- Failure to identify future business needs
- Technological obsolescence
- Failure to make available user-friendly checklist/guidelines.

9.(a) Write down the benefits arising out of Total Productivity Management (TPM).

(b) What do you mean by Total Quality Management (TQM)? State the three core concepts of it.

Answer:

(a) With the adoption of TPM at the enterprise level, your organisation would benefit from the following aspect:

- A set of new management goals will be developed by the Management, using the skills and training provided during the implementation of the TPM
- Team bonding and better accountability
- Improved quality and total cost competitiveness
- Productivity and quality team training for problem solving
- Earlier detection of factors critical to maintaining equipment "uptime"
- Measure impact of defects, sub-optimal performance, and downtime using OEE (Overall Equipment Effectiveness)
- Motivated people function better all the time.

(b) Total Quality Management (TQM) is an active approach encompassing a company-wide operating philosophy and system for continuous improvement of quality. It demands cooperation from everyone in the company, from the top management down to workers.

The principles of TQM are as follows:

i) Customer Focus

ii) Managerial Leadership

iii) Belief in continuous improvement.

The current thinking of TQM is moving from Quality of product and service to Quality of people to embrace also Quality of environment.

TQM seeks to increase customer satisfaction by finding the factors that limit current performance. The TQM approach highlights the need for a customer-oriented approach to management reporting, eliminating some or more of traditional reporting practices.

The emphasis of TQM is to design and build quality in the product, rather than allow defectives and then inspect and rectify them. The focus is on the causes rather than the symptoms of poor quality.

The three core concepts of TQM are -

A) Quality Control (QC): It is concerned with the past and deals with data obtained from previous production, which allow action to be taken to stop the production of defective units.

B) Quality Assurance (QA): It deals with the present and focuses to create and operate appropriate systems to prevent defects from occurring.

C) Quality Management (QM): It concerned with the future and manages people in a process of continuous improvement to the products and services offered by the firm.

10.(a) What is cross elasticity of demand?

(b) Write down the factors involved in Demand Forecasting.

(c) "Market for a commodity may be local, regional, national or international." — State the elements of markets.

Answer:

(a) Cross elasticity of demand: The rate of change in the demand for one commodity due to the change in the price of its substitutes and complementary goods is called cross elasticity of demand.

$$\text{Cross Elasticity of Demand} = \frac{\text{Percentage change in the Demand for commodity X}}{\text{Percentage change in the Price of Y}}$$

If the percentage change in the demand for commodity X is more than the percentage change in the price of Y, then the cross elasticity of demand is greater than one ($E_d>1$). If the percentage change in the demand for commodity X is less then percentage change in the price of commodity Y, then the cross elasticity of demand is less than one ($E_d<1$). If the percentage change in the demand for commodity X is equal to percentage change in the price of commodity Y, then the cross elasticity of demand is equal to one ($E_d=1$).

(b) Factors involved in Demand Forecasting:

1. Time factor: Forecasting may be done for short-term or long-term. Short-term forecasting is generally taken for one year while long-term forecasting covering a period of more than 1 year.

2. Level factor: Demand forecasting may be undertaken at three different levels.
   a. Macro level: It is concerned with business conditions over the whole economy.
   b. Industry level: Prepared by different industries.
   c. Firm-level: Firm-level forecasting is the most important from managerial view point.

3. General or specific purpose factor: The firm may find either general or specific forecasting or both useful according to its requirement.

4. Product: Forecasting varies type of product i.e., new product or existing product or well established product.

5. Nature of the product: Goods can be classified into:
   (i) consumer goods and (ii) producer goods.
   Demand for a product will be mainly dependent on nature of the product. Forecasting methods for producer goods and consumer goods will be different accordingly.

6. Competition: While making forecasting, market situation and the product position in particular market should be analyzed.

7. Consumer Behaviour: What people think about the future, their own personal prospects and about products and brands are vital factors for firm and industry.

(c) Elements of Markets:

1. Sellers and buyer agree to transact at a particular price of a product.
2. Nature of the commodity is known to both parties
3. Price of the product is determined under conditions of the market
4. Competition is depend on the increase in the buyers and seller
5. If there is increase in number buyers, price will increase and it is treated as Seller's market
6. If there is increase in number sellers, price will decrease, it is treated as buyer's market
7. Free communication between the buyers and sellers.
8. Size of the market is not restricted; it may certain city, a region a country or even the entire world.
9. Product is homogenous in case of perfect competition, and the product may be differentiated in case of other markets.

11.(a) List out the features of perfect competition market and monopoly market.
(b) How price is determined in an oligopoly market?

Answer:

(a) Features of perfect competition market:

1. There must be large number of Buyers and sellers.
2. In perfect competition, the goods produced by different firms are homogenious or identical.
3. In perfect competition there is free entry and exit of the firms into the industry.

4. The buyers and the sellers must have the knowledge with regard to the prices of various commodities at different supply and demand forces.
5. The factors must be mobilized from those places where they are getting less remuneration to those places where they will get maximum remuneration.
6. All commodities are identical in perfect competition. So the prices of the commodities are also uniform.
7. In order to maintain the uniform price level in perfect competition we should not include the transport cost in the price level.
8. There is a difference between firm and industry under perfect competition. Firm is a production unit and where as industry is a group of firms.

Features of monopoly market:

1. Single producer: Under monopoly there is only one producer or seller. He controls the entire supply of the commodities. Monopoly may be an individual or a partnership or a joint stock company or a state. There is no competition in monopoly market.
2. No close substitutes: there are "no close substitutes" in monopoly market. There are no other firms produce the similar and nearer commodities for the product of monopoly.
3. No difference between Firm and Industry: Under Monopoly market there is "no difference between firm and industry". There is only one firm and other firms should not produce the similar products which are produced by the monopoly firm. Therefore the firm and industry both are same under monopoly market.
4. No free entry: The monopoly firm can get abnormal profits in the short run as well as in the long run because of strong restrictions on the entry of new firms. If the new firms have freedom to enter the market then the abnormal profits will disappear but in monopoly there is no free entry and therefore the Monopoly firm may get abnormal profits in long run also.
5. Monopolist controls only price (or) output: Under monopoly the producer has controlling power on only price or output. He has no controlling power on both price and output simultaneously.
6. Revenue curve falls down from left to right: In monopoly market the revenue curves are falling down from left to right. If the monopolist wants to sell more he must reduce the price level and if he wants to fix more prices he must reduce the output.

(b) Price can be determined in three ways under oligopoly:

1. Independent pricing: If there is a product differentiation under oligopoly each firm can act as a monopoly and fixes the price independently. Therefore the firm may determine its price in that way where it gets maximum profits. If there is no product differentiation, it is difficult to know the price determination in accurate manner the firm may compete each other and finally they may fix the common reasonable price which cannot be changed. But this policy independent pricing cannot with stand in the market.
2. Pricing Under collusion: Most of the firms have the opinion that independent price determination leads to uncertainly. To avoid this defect there is a tendency among the oligopoly firm to act collectively by collusion. In this method these firms may make 'cartle' arrangement. The centralized cartle determines the output produce by different firms and the price is also determined which is the most acceptable by all firms. The firms may agree to share the market even though they are producing homogeneous products.

3. Price leadership: If the other firms follow the price which is determined by one firm in oligopoly then we can say that there is a dominant firm or the firm with low costs or well established old firm may take this leadership and fixes the price.

12.(a) The total revenue from sale of 'x' units is given by the equation $R = 100x - 2x^2$, calculate the point price elasticity of demand, when marginal revenue is 20.

(b) The total cost (C) and the total revenue (R) of a firm are given C (x) = x3 + $60x^2$ + 8x; R(x) = 3x3 - $3x^2$ + 656x, x being output determine, the output for which the firm gets maximum profit. Also obtain the maximum profit.

Answer:

(a)

$$R = 100x - 2x^2$$

$$\text{Price (P)} = 100 - 2x$$

$$MR = \frac{dR}{dx} = 100 - 4x$$

$$\frac{p}{x} = \frac{100}{x} - 2$$

$$\frac{dp}{dx} = -2 = \frac{dx}{dp} = \frac{1}{2}$$

$$E_p = \frac{1}{2} \times \left(\frac{100}{x} - 2\right)$$

$$= \frac{50}{x} - 1$$

$$= \frac{50}{20} - 1$$

$$= \frac{5}{2} - 1$$

$$= \frac{5-2}{2} = \frac{3}{2}$$

$$MR = 20, x \text{ is .....}$$

$$100 - 4x = 20$$

$$4x = 80$$

$$x = 20$$

(b)

$C = x^3 + 60x^2 + 8x$

$R = 3x^3 - 3x^2 + 656x$

$\text{Profit} = 3x^3 - 3x^2 + 656x - x^3 - 60x^2 - 8x$

$= 2x^3 - 63x^2 + 648x = (p)$

Derivative w.r.to x

$\frac{dp}{dx} = 6x^2 - 126x + 648 = 0$

$x^2 - 21x + 108 = 0$

$x^2 - 9x - 12x + 108 = 0$

$x(x-9) - 12(x-9) = 0$

$(x-12)(x-9) = 0$

$x = 12 \text{ or } 9$

$\frac{d^2p}{dx^2} = 2x - 21$

at $x = 9$

$\frac{d^2p}{dx^2} = 18 - 21 = -3 < 0$

$\therefore$ P is maximum at $x = 9$

at $x = 12$

$\frac{d^2p}{dx^2} = 24 - 21 = 3 > 0$

$\therefore$ P is minimum at $x = 12$

$P = 2x^3 - 63x^2 + 648x$

at $x = 9$

$\text{Profit } P = 2(9)^3 - 63(9)^2 + 648(9)$

$= 1458 - 5103 + 5832 = 2187$

13.(a) What is risk mapping? State the benefits of it.
(b) State the needs for implementation of Enterprise Risk Management (ERM).

Answer:

(a) Risk mapping: Risk mapping is the first step in operational risk measurement, since it requires identifying all potential risks to which the bank is exposed and then pointing out those on which attention and monitoring should be focused given their current or potential future relevance for the bank. while the risk mapping process is sometimes identified with the usual classification of operational risks in a simple frequency/ severity matrix, what is really needed to map banks' internal processes in order to understand what could go wrong, where, and why, to set the basis for assessing potential frequency and the severity of potential operational events, and to define a set of indicators that can anticipate problems based on the evolution of the external and internal environments. Careful risk mapping is an important as a first step for operational risk measurement as it is for the audit process, when potential pitfalls have to be identified in advance and properly eliminated or at least monitored. risk mapping should start from process mapping and from identifying critical risks in each process phase, linked either to key people, to systems, to interdependencies with external players, or to any other resource involved in the process. Subsequently, potential effects of errors, failures or improper behavior should be analyzed. This may also lead to identifying priorities in terms of control actions.

Risk mapping is the process of identifying, quantifying and prioritizing the risks that may interfere with the achievement of your organizational objectives. Its aim is to arrive at a clear set of action plans that improve risk management controls, in areas where these are necessary and help the management of the organization's direct resources.

Benefits of Risk Mapping:

- Promotes awareness of significant risks through priority ranking, facilitating the efficient planning of resources.
- Enables the delivery of solutions and services across the entire risk management value chain.
- Serves as a powerful aid to strategic business planning.
- Aids the development of an action plan for the effective management of significant risks.
- Assigns clear responsibilities to individuals for the management of particular risk areas.
- Provides an opportunity to leverage risk management as a competitive advantage.
- Facilitates the development of a strategic approach to insurance programme design.
- Supports the design of the client's risk financing and insurance programmes, through the development of effective/optimal retention levels and scope of coverage etc.

(b) Need for Implementation of ERM:

ERM needs to be implemented for the following reasons:

1. Reduce unacceptable performance variability.
2. Align and integrate varying views of risk management.
3. Build confidence of investment community and stakeholders.
4. Enhance corporate governance.
5. Successfully respond to a changing business environment.
6. Align strategy and corporate culture.

Traditional risk management approaches are focused on protecting the tangible assets reported on a company's Balance Sheet and the related contractual rights and obligations. The emphasis of ERM, however, is on enhancing business strategy. The scope and application of ERM is much broader than protecting physical and financial assets. With an ERM approach, the scope of risk management is enterprise-wide and the application of risk management is targeted to enhancing as well as protecting the unique combination of tangible and intangible assets comprising the organization's business model.

14.(a) There are various causes for corporate distress. Write down those causes to analyse corporate distress.

(b) Write a short note on risk pooling in the context of risk management.

Answer:

(a) Causes for Corporate Distress Analysis:

1. Technological Causes:

   Traditional methods of doing work have been turned upside down by the development of new technology. If within an industry, there is failure to exploit information technology and new production technology, the firms can face serious problems and ultimately fail.

   By using new technology, cost of production can be reduced and if an organization continues to use the old technology and its competitors start using the new technology; this can be detrimental to that organization. Due to high cost of production, it will have to sell its products at higher prices than its competitors and this will consequently reduced its sales and the organization can serious problems.

2. Working Capital Problems:

   Organizations also face liquidity problems when they are in financial distress. Poor liquidity becomes apparent through the changes in the working capital of the organization as they have insufficient funds to manage their daily expenses.
   Businesses, which rely only on one large customer or a few major customers, can face severe problems and this can be detrimental to the businesses. Losing such a customer can cause big problems and have negative impact on the cash flows of the businesses.

   Besides, if such a customer becomes bankrupt, the situation can even become worst, as the firms will not be able to recover these debts.

3. Economic Distress:

   A turndown in an economy can lead to corporate failures across a number of businesses. The level of activity will be reduced, thus affecting negatively the performance of firms in several industries. This cannot be avoided by businesses.

4. Mismanagement:

   Inadequate internal management control or lack of managerial skills and experience is the cause of the majority of company failures. Some managers may lack strategic capability that is to recognize strengths, weaknesses, opportunities and threats of a given business environment. These managers tend to take poor decisions, which may have bad consequences afterwards.

   Furthermore, managers of different department may not have the ability to work closely together. There are dispersed department objectives, each department will work for their own benefits not towards the goal of the company. This will bring failure in the company.

5. Over-expansion and Diversification:

   Research has shown that dominant CEO is driven by the ultimate need to succeed for their own personal benefits. They neglect the objective set for the company and work for their self-interest. They want to achieve rapid growth of the company to increase their status and pay level. They may do so by acquisition and expansion.

   The situation of over expansion may arise to the point that little focus is given to the core business and this can be harmful as the business may become fragment and unfocused. In addition, the companies may not understand the new business field.

6. Fraud by Management:

Management fraud is another factor responsible for corporate collapse. Ambitious managers may be influenced by personal greed. They manipulate financial statements and accounting reports. Managers are only interested in their pay checks and would make large increase in executive pay despite the fact that the company is facing poor financial situation. Dishonest managers will attempt to tamper and falsify business records in order to fool shareholders about the true financial situation of the company. These fraudulent acts or misconduct could indicate a serious lack of control. These frauds can lead to serious consequences: loss of revenue, damage to credibility of the company, increased in operating expenses and decrease in operational efficiency.

7. Poorly Structured board:

Board of Directors is handpicked by CEO to be docile and they are encouraged by executive pay and generous benefits. These directors often lack the necessary competence and may not control business matters properly. These directors are often intimated by dominant CEO and do not have any say in decision making.

8. Financial Distress:

Firms that become financially distressed are found to be under- performing relative to the other companies in their industry. Corporate failure is a process rooted in the management defects, resulting in poor decisions, leading to financial deterioration and finally corporate collapse. Financial distresses include the following reasons also low and declining profitability, investment Appraisal, Research and Development and technical insolvency amongst others.

(b) Risk Pooling: One of the forms of risk management mostly practiced by insurance companies is Risk Pool. Under this system, insurance companies come together to form a pool, which can provide protection to insurance companies against catastrophic risks such as floods, earthquakes etc. The term is also used to describe the pooling of similar risks that underlies the concept of insurance. While risk pooling is necessary for insurance to work, not all risks can be effectively pooled. In particular, it is difficult to pool dissimilar risks in a voluntary insurance market, unless there is a subsidy available to encourage participation.

Risk pooling is an important concept in supply chain management. Risk pooling suggests that demand variability is reduced if one aggregates demand across locations because as demand is aggregated across different locations, it becomes more likely that high demand from one customer will be offset by low demand from another. This reduction in variability allows a decrease in safety stock and therefore reduces average inventory.

The three critical points to risk pooling are:

(1) Centralized inventory saves safety stock and average inventory in the system.
(2) When demands from markets are negatively correlated, the higher the coefficient of variation, the greater the benefit obtained from centralized systems i.e., the greater the benefit from risk pooling.
(3) The benefits from risk pooling depend directly on the relative market behaviour. If we compare two markets and when demand from both markets is more or less than the average demand, we say that the demands from the market are positively correlated. Thus the benefits derived from risk pooling decreases as the correlation between demands from the two markets becomes more positive.

The basis for the concept of risk pooling is to share or reduce risks that no single member could absorb on their own. Hence, risk pooling reduces a person or fim's exposure to financial loss by spreading the risk among many members or companies. Actuarial concepts used in risk pooling include:

1. Statistical variation.
2. The law of averages.
3. The law of large numbers.
4. The laws of probability.

15.(a) Using Altman's Multiple Discriminant Function, calculate Z-score of S & Co. Ltd., where the five accounting ratios are as follows and comment about its financial position:

Working Capital to Total Assets=0.250

Retained Earnings to Total Assets = 50%

EBIT to Total Assets = 19%

Book Value of Equity to Book Value of Total Debt= 1.65

Sales to Total Assets = 3 times

(b) Balance Sheet (extract) of Q Ltd. as on 31 March 2017.

Liabilities	₹ in Crores	Assets	₹ in Crores
Equity Shares	20.80	Fixed Assets	105.60
Long-term Liabilities Current	104.00	Current Assets	57.60
Liabilities	78.40	Profit & Loss A/c	40.00
	203.20		203.20

Additional Information:

(i) Depreciation written off ₹ 8 crores.
(ii) Preliminary Expenses written off ₹ 1.60 crores.
(iii) Net Loss ₹ 25.60 crores.

Ascertain the stage of sickness.

Answer:

(a) As the Book Value of Equity to Book Value of Total Debt is given in the problem in place of Market Value of Equity to Book Value of Total Debt, the value of Z-score is to be computed as per Altman's 1983 Model of Corporate Distress Prediction instead of Altman's 1968 Model of Corporate Distress Prediction.

As per Altman's Model (1983) of Corporate Distress Prediction,

$Z=0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$

Here, the five variables are as follows:

X_1 = Working Capital to Total Assets = 0.250

X_2 = Retained Earnings to Total Assets = 0.50

X_3 = EBIT to Total Assets = 0.19

X_4 = Book Value of Equity Shares to Book Value of Total Debt = 1.65

X_5 = Sales to Total Assets = 3 times

Hence, Z-score = (0.717 x 0.25) + (0.847 x 0.50) + (3.107 x 0.19) + (0.420 x 1.65) + (0.998 x 3)

= 0.17925 + 0.4235 + 0.59033 + 0.693 + 2.994 = 4.88

Note: As the calculated value of Z-score is much higher than 2.9, it can be strongly predicted that the company is a non-bankrupt company (i.e., non-failed company).

(b) The NCAER Study on Corporate Distress Prediction prescribed the following three parameters for predicting the stage of Corporate Sickness:

(i) Cash profit position (a profitability measure)
(ii) Net working capital position (a liquidity measure)
(iii) Net worth position (a solvency measure)

In the given case, we need to judge the above-mentioned parameters to ascertain the stage of sickness of the company.

(i) Cash profit = Net profit + (Non-cash expenses/losses debited to Profit & Loss A/c) – (Non-cash incomes/Gains credited to Profit & Loss A/c)

Here, Cash Profit = Net Profit + Depreciation Written Off + Preliminary Expenses Written Off

= ₹ [(25.60) + 8+ 1.60] = (₹ 16 crores)

(ii) Net Working Capital = Current Assets – Current Liabilities

= ₹ [57.60 - 78.40] = (₹ 20.80 crores)

(iii) Net Worth = Share Capital + Reserves & Surplus - Miscellaneous Expenditure - Profit & Loss A/c (Dr.)

Here, Net Worth = Equity Share Capital - Profit & Loss A/c (Dr.)

= ₹ [20.80 - 40.00] = (₹ 19.20 crores)

Prediction about Corporate Sickness: As per NCAER Research Study, out of mentioned three parameters, if any one parameter becomes negative in case of a firm, it can be predicted that the firm has a tendency towards sickness. In the given company, all the three parameters [as calculated under (i), (ii) and (iii)] show negative value. Therefore, it can strongly be predicted that the company is a sick company and its stage of sickness is 'fully sick'. Immediate necessary drastic revival measures are essentially required for the survival of the company.

Section B: Business Valuation

16. Multiple choice questions with justification wherever necessary:

(i) The annual coupon bond with duration of 9 years, coupon of 14% and YTM of 15% will have a modified duration of

(A) 6.9 years
(B) 8.18 years
(C) 7.83 years
(D) 9.78 years

(ii) A major advantage of Price/Sales ratio is that

(A) It can be used to value firms with negative earnings.
(B) It can be used to value firms with negative net worth.
(C) Both (A) and (B) above.
(D) It can be used effectively in cyclical industries.

(iii) Under _________ method, increasing shareholders wealth is given maximum importance.
(A) Economic Value Added
(B) Constant growth FCFE model
(C) Dynamic true growth model
(D) Variable growth FCFE model

(iv) A company with PAT of ₹40 lacs, tax rate 50%, RONW of 100%, Reserves of ₹30 lac and a par value of ₹5 will have pre-tax EPS of
(A) ₹4.00
(B) ₹80.00
(C) ₹40.00
(D) Insufficient information

(v) P/E rises when:
(A) Growth rises, discount rate falls, reinvestment rate is flat.
(B) Growth falls, discount rate falls, reinvestment rate rises.
(C) Growth exceeds, discount rate and reinvestment rate falls short of growth.
(D) Discount rate falls and reinvestment rate rises.

(vi) An investment is risk free when actual returns are always ………………..the expected returns.
(A) equal to
(B) less than
(C) more than
(D) depends upon circumstances

(vii) In valuing a firm, the…………………….tax rate should be applied to earnings of every period.
(A) marginal
(B) effective
(C) average
(D) maximum

(viii) In the context of an acquisition of a firm, which one of the following concepts of value is least relevant?
(A) Market Value
(B) Opportunity Cost
(C) Synergy Value
(D) Value Gap

(ix) Shareholders of target companies are typically paid in
(A) Government bonds held by the target company
(B) Government bonds held by the acquiring company
(C) Cash and / or shares of the acquiring company
(D) None of the above

(x) Assume that in a Stock Market, the CAPM is working. A company has presently beta of 0.84 and its going to finance its new project through debt. This would increase its Debt / Equity Ratio to 1.56 from the existing 1.26. Due to increased Debt / Equity Ratio, the Company's beta would:

(A) Increase

(B) Decrease

(C) Remain unchanged

(D) Nothing can be concluded.

Answer:

(i) (C) 7.83 years
Modified duration = {9 / (1 + 0.15)}

(ii) (C) Both (A) and (B) above.
Price/Sales ratio is the multiplication of P/E ratio to profit margin. It can be used to value firms with negative earnings and negative net worth

(iii) (A) Economic Value Added.
The theory of Economic Valued Added has traditionally suggested that every company's primary goal is to maximize the wealth of shareholders

(iv) (C) ₹40.00.
PBT = 80 lac, i.e. 40/5, RONW = PAT/NW = 40/NW = 100%, So NW = 40lac, Value of equity shares = 40-30 = 10 lac, No. of Shares = 10/5 = 2 lac, so Pre tax EPS = 80/2 = 40Lac

(v) (D) Discount rate falls and reinvestment rate rises.
The P/E ratio (price-to-earnings ratio) of a stock also called its "P/E", or simply "multiple" is a measure of the price paid for a share relative to the annual Earnings per share. Price of stock will rise if discount rate falls and reinvestment rate increases which in turn will increase the P/E ratio.

(vi) (A) equal to.

(vii) (A) marginal.

(viii) (B) Opportunity Cost

(ix) (C) Cash and / or shares of the acquiring company

(x) (C) Remain unchanged, because as per CAPM the company specific risk has no impact on the systematic risk.

17.(a) What are the misconceptions about valuation?
(b) How do you relate coupon rate, required yield and price?

Answer:

(a) There are a number of misconceptions about valuation.

(1) A valuation is an objective search for true value.
(2) Since valuation models are quantitative, valuation is better.
(3) A well researched and well done valuation is timeless
(4) A Good valuation provides a precise estimate of value.
(5) To make money on valuation, you have to assume that markets are inefficient.
(6) The product of valuation (i.e., value) matters and not the valuation.
(7) How much a business is worth depends on what the valuation is used for.

(b) As the expected yield changes in the market place, prices of bonds change to reflect the new required yield. When the required yield on a bond rises above its coupon rate, the bond sells at Discount. When the required yield on a bond falls below its coupon rate, the bond

sells at a premium. We can summarize the relationship between coupon rate, required yield and prices as follows:
Coupon rate < Required yield = Price < par value (Discount bond)
Coupon rate = Required yield = Price = Par value (At par bond)
Coupon rate > required yield = Price > par value (Premium bond)

18.(a) Distinguish between price and value.
(b) What do you mean by LIFO Reserve?

Answer:

(a) The price may be understood as 'the amount of money or other consideration asked for or given in exchange for something else'. The price is therefore, an outcome of a transaction whereas the value may not necessarily require the arrival of a transaction. The value exists even if some assets become unable to generate cash flows today but can generate in future on the happening of some events.

"Experts are of the opinion that valuation must be differentiated from price. While the fair value of an asset is based on the assessment of intrinsic value accruing from fundamentals on a stand-alone basis, varying return expectation and underlying strategic aspects for different bidders could influence the price. A purchase and sale would be possible only when two parties while forming different views as to the value of an asset, are eventually able to reach agreement on the same price. It would be better appreciated by recognition of the fact that Government can only realize what a buyer is willing to pay for the PSU, as the purchase price ultimately agreed reflects its value to the buyer.

Another notable point is that valuation is a subjective figure arrived at by the bidder by leveraging his strengths what the potential of the company. Depending on the level of business synergy with the target company, perception of specific value realization and varying assessment regarding productivity, capex, etc., this figure may vary from bidder to bidder".

The oil reserve of an indentified basin owned by a hydrocarbon exploration company may not have any value when the oil price is say ₹70 per barrel and the extraction cost of that oil is ₹110. However, when the price reaches to ₹130 and is expected to prevail around this figure, it may have significant value.

Another example reaffirms that price and value is not same. A lawyer is having some question regarding a professional assignment having remuneration of ₹2,50,000. He browses through some pages of a book at a bookshop and buys it for ₹40,000. He has an idea in his mind that the book is essential for earning professional services fees of ₹2,50,000 and expected contribution from the book would be around ₹80,000. At this stage the value / Worth of that book is ₹80,000. However, after reading the book he feels that the book is not useful for his assignment. If the same book cannot be returned to the shop, its disposal value would be negligible.

(b) Companies that use LIFO for determining their balance sheet valuation of inventory nevertheless keep their detailed inventory records on a FIFO or average cost basis. The inventory amounts on these other bases usually will be higher than the LIFO valuation shown on the balance sheet. At the end of each accounting period, the difference between the LIFO valuation and the FIFO or average cost valuation is determined. This difference is sometimes called the LIFO reserve. The terminology is unfortunate because "reserve" suggests something set aside or saved for some special future purpose. The LIFO reserve is nothing more than the mathematical difference between two inventory amounts, one based on LIFO and the other one based on a different method of valuing inventory. LIFO companies disclose their LIFO reserve in the notes for their financial statement.

19.(a) Discuss the steps involved in valuing a firm under Discounted Cash Flow Method.
(b) Why discounted cash flow method is not appropriate for valuation of real estate.

Answer:
(a) Steps in valuing firm under Discounted Cash Flow Method:

(I) Computation of Free Cash Flows for the forecast period. Free cash flow is the post tax cash flow generate from operations of the company after providing for investments in fixed capital and net working capital required for operations of the firm. Thus it is the cash flow available for distribution to shareholders (by way of dividend and buyback of shares) and lenders (by way of interest payment and debt repayment). Symbolically, free cash flow = Net income (+) Depreciation (+ / -) Non Cash items (-) changes in Working Capital (-) Capital expenditure (+) (New debt issues – repayment of debt) (-) preference dividends.

(II) Determination of Discount Rate for estimating present value. In general, the cost of capital is appropriate discount rate.

(III) Computation of Present Value of cash flows. The free cash flows are discounted using appropriate discount rate

(IV) Estimation of Terminal Value, i.e., present value of cash flows occurring after the forecast period.

(V) Value of firm = It is aggregate of the present value of free cash flows and the terminal value.

(b) Discounted Cash Flow (DFC) Method of valuation is not appropriate for valuation of real estate due to following reasons:

(1) Difficult to estimate discount rates for most real estate investments.
(2) Estimating cash flows for the time horizon is tedious and difficult to do, as is the estimation of the terminal value.
(3) DCF does not reflect market conditions – that the market is strong or weak at the time of valuation.

The third argument can be rejected at two levels. On one level, cash flows should reflect the market conditions, since they will be higher (higher rents and lower vacancy rates) and grow faster in strong market conditions. On the other hand, any additional value being assigned by the market beyond the cash flow levels can be considered to be 'overvaluation' and should not be built into the appraised value in the first place.

20.(a) What are different methods valuing self generated brands.
(b) 'Jaggi & Lau suggested that a proper valuation of human resource is not possible unless the contribution of individuals as a group is taken into consideration.' Comment.

(a) Important methods in valuation of self generated brands are discussed below:

(I) Historical cost method: Here Brand value is the sum total of Brand Development cost + Brand Marketing and Distribution cost + Brand Promotion cost including advertising and other cost.

(II) Replacement Price Model: It is the opportunity cost of investment made for replacement of brand, Brand Value = Replacement Brand Cost.
(III) Market Price Model: Here Brand value is net realizable value on sale in the market.
(IV) Current Cost Model: According to this approach the current corporate brands are valued at the current value to the group which is reviewed annually and not subject to amortization.
(V) Potential Earning Model: The potential earning model is based on the estimated potential earning that would be generated by a brand and their capitalization by using appropriate discount rate. The volume of revenues raised by a brand in the market determines its value.

Total market value of brand = Net brand revenue / capitalization rate
Net – Brand revenue = (Brand units x Unit brand price) – (Brand units x Unit brand cost) – (Marketing cost + R & D cost + tax costs.

(b) Jaggi and Lau suggested a model for valuation of human resources. According to them, proper valuation of human resources is not possible unless the contributions of individuals as a group are taken into consideration. They referred group to homogeneous employees whether working in the same department or division of the organization or not. They believed that an individual's expected service tenure in an organization is difficult to predict, but on a group basis, it is relatively easy to estimate the percentage of people in a group likely to leave the organization in future. Accordingly, they developed a model which attempts to calculate the present value of all existing employees in each rant. Such present value is measured with the help of the following steps:
(I) Ascertain the number of employees in each rank.
(II) Estimate the probability that an employee will be in his rank within the organization or terminated / promoted in the next period. This probability will be estimated for the specified time-period.
(III) Ascertain the economic value of an employee in a specified rank during each time period.
(IV) The present value of existing employees in each rank is obtained by multiplying the above three factors and applying an appropriate discount rate.

Merit:
Jaggi and Lau model approached the valuation of human resources on the basis of grouping of employees. Under this method, calculations get simplified and the chances of errors get reduced.

Demerit:
This model ignores individual skills of the employees. The varied skills of the employees are not recognized in the valuation process under Jaggi and Lau model.
The performance of a group may be seriously affected in the event of exit of a single individual.

21.(a) A PSU is proposing to sell a 8 years bond of ₹1,000 at 10% coupon rate per annum. The bond amount will be amortized equally over its life. If an investor has a minimum required rate of return of 8%, what the bond's present value? If this bond sells at ₹1100, should an investor buy this bond?
(b) Consider a bond selling at its par value of ₹1,000, with 6 years to maturity and a 7% coupon rate (with annual interest payment), what is bond's duration? If the YTM of this

bond increases to 10%, how it affects the bond's duration? And why? Why should the duration of a coupon carrying bond always be less than the time to its maturity?

Answer:

(a) Discount rate is given as 8%

Year	Cash Flow	Principal Amortized	Cash Outflow	PV factor 8%	PV of Cash Flows
1	100.00	125	225.00	0.926	208.350
2	87.50	125	212.50	0.857	182.113
3	75.00	125	200.00	0.794	158.800
4	62.50	125	187.50	0.735	137.813
5	50.00	125	175.00	0.681	119.175
6	37.50	125	162.50	0.630	102.375
7	25.00	125	150.00	0.583	87.450
8	12.50	125	137.50	0.540	74.250
Total	450	1000	1450		1070.326

The Bond's present value is ₹1070.33. Since the market value of bond is higher than the intrinsic value the investor should not buy this bond.

(b) We are given the price of the bond as ₹1000.

We also know that duration is given by:

$$D = \frac{\sum_{t=1}^{n} \frac{t \times C}{(1+i)^{t}} + \frac{n \times M}{(1+i)^{n}}}{P}$$

Where

n = number of cash flows = 6

t = time to maturity = 6

C = Coupons - ₹ 70

i = required yield =7%

M = maturity (par) value = 1000

P = bond price = ₹1000

D = Required

$$D = \frac{\frac{1 \times 70}{1.07} + \frac{2 \times 70}{(1.07)^2} + \frac{3 \times 70}{(1.07)^3} + \frac{4 \times 70}{(1.07)^4} + \frac{5 \times 70}{(1.07)^5} + \frac{6 \times 70}{(1.07)^6} + \frac{6 \times 100}{(1.07)^6}}{1000} = 5.098 \text{ years}$$

If the YTM increases to 10%, then the coupons would be re-invested at higher rates, thereby decreasing the time required for getting the initial investment. Hence, duration, which is nothing but, weighted discounted payback period, decreases. We can re-calculate to verify the same:

$$D = \frac{\frac{1\times 70}{1.1} + \frac{2\times 70}{(1.1)^2} + \frac{3\times 70}{(1.1)^3} + \frac{4\times 70}{(1.1)^4} + \frac{5\times 70}{(1.1)^5} + \frac{6\times 70}{(1.1)^6} + \frac{6\times 1000}{(1.1)^6}}{1000} = 5.025 \text{ years}$$

1000 The term duration is a measurement of how long in years it takes for the price of a bond to be repaid by its internal cash flows. In a zero coupon bond we do not receive any intermediate cash flows and the entire money is available only on maturity, and hence duration of a Zero-Coupon Bond is equal to maturity period. On the same lines since coupon bonds, pays coupons (intermediate interest), we get our price much earlier to maturity period. Moreover, we receive the re-investment income too. Therefore, duration of a coupon bond will always be less than its maturity period.

22.(a) Shares of A ltd. is currently quoted at ₹40/-. Dividend expected offer 1 year is ₹8, which is expected to grow by 8% p.a. Their standard deviation of the return from the security is 4%. Co-relation Coefficient is 0.6 and the market standard deviation is 3%.
Determine expected return from Government securities is return from market portfolio is 22%

(b) X Ltd. earns ₹8 per share. Market role of return is 12% and risk free return is 8%. Beta of shares is 1.50. Suggest whether an investor should buy the shares at current price of ₹40/-.

Answer:

(a) Cost of Equity (dividend growth model) = $\frac{Rs.8}{Rs.40}$ + 0.08 = 0.28

Security Beta = B_1
Co-relation Co-efficient = P_{1m} = 0.06
Standard deviation of security return = 6_1
Standard deviation of market return = 6_m

$B_p = P_{1m} \times \frac{6_p}{6_m}\ 0.6 \times \frac{4}{3} = 0.80$

Using CAPM model:
$R_l = R_f + 0.8\ (0.22 - R_f) = K_e$
$0.28 = R_f + 0.8\ (0.22 - R_f)$
$R_f = 0.10$
Or 10%

(b) Desired rate of return = 8% + 1.5 (12% - 8%) = 14%

Actual rate of return = $\frac{8}{40}$ = 20%

Equilibrium price = $\frac{8}{0.14}$ = ₹57.14

Actual price = ₹40

Suggestion
The investor should buy the share at ₹40/-.

23.(a) The Balance Sheet of T Ltd. discloses the following financial position as at 31-3-2017

Liabilities	Amount	Assets		Amount
Paid-up-Capital:		Good will at Cost		30,000
30,000 shares of ₹10 each fully paid	3,00,000	Land and Building at cost less Depreciation		1,75,000
Capital Reserve	60,000	Plant and Machinery at cost less		90,000
Sundry Creditors	71,000	Depreciation Stock at cost		1,15,000
Provision for Taxation	55,000	Book Debts	98,000	
Profit and Loss A/c	26,000	Less: Provision Doubtful debts	30,000	95,000
		Cash at Bank		7,000
Total	5,12,000	Total		5,12,000

You are asked to compute the value per share of T Ltd. for which purpose the following information is supplied:

(a) Adequate provision has been made in the accounts for income-tax and depreciation.

(b) Rate of income-tax may be taken at 50%

(c) The average rate of dividend declared by the company for the past five years was 15 per cent.

(d) The reasonable return on capital invested in such class of business done by the company is 12 per cent.

(b) The following information is available of a concern; calculate E.V.A.:

Debt capital 12%	₹2,000 crores
Equity capital	₹500 crores
Reserve and Surplus	₹7,500 crores
Capital employed	₹10,000 crores
Risk-free rate	9%
Beta factor	1.05
Market rate of return	19%
Equity (market) risk premium	10%
Operating profit after tax	₹2,100 crores
Tax rate	30%

Answer:

(a) Intrinsic Value Method (No. of years of purchase Method)

Step 1: Actual Capital Employed

Assets side approach

Land and Building	1,75,000
Plant and Machinery	90,000
Stock	1,15,000
Book debts	95,000
Cash at bank	7,000
	4,82,000
Less: Sundry Creditors	71,000
Provision for taxation	55,000
	3,56,000

Liability side approach

Paid up Capital	3,00,000
Capital Reserve	60,000

Profit and Loss Account	26,000
Goodwill	(30,000)
	3,56,000

Step 2: Actual Profit /Future Maintainable Profit
Actual Profit after tax = 55,000

Step 3: Expected Profit
Expected Profit = Capital employed x Normal rate of return
= 3,56,000 x 12% = 42,720

Step 4: Super Profit

Future Maintainable Profit	55,000
Less: Expected Profit	42,720
Super Profit	12,280

Step 5: Goodwill
Goodwill = Super Profit x No. of Years' Purchase
No. of Years Purchase = 100 / Normal Rate of return
= 100 / 12 = 8.33
Goodwill = 12,280 x 8.33 = 1,02,292

Step 6: Value of Business (Equity)

Capital Employed	3,56,000
Add: Goodwill	1,02,292
Capital employed for shares	4,58,292

Step 7: Value per share
Value per share = $[\frac{Value\ of\ Business}{No. of\ Shares}]$
= 4,58,292 / 30,000 = 15.28

Intrinsic Value Method (Yield method)
Step 1: Actual Capital employed
Actual Capital Employed = 3,56,000
(Step 1 in No. of years purchase method)

Step 2: Actual Profit/Future Maintainable Profit
Actual Profit after tax = 55,000

Step 3: Expected Capital employed
Expected capital employed = Actual Profit/Return on capital employed
= 55,000/12% = 4,58,333

Step 4: Goodwill
Goodwill = Expected Capital employed – Actual Capital Employed
= 4,58,333 – 3,56,000 = 1,02,333

Step 5: Value of Business (Equity)

Capital Employed	3,56,000
Add: Goodwill	1,02,333
Capital Employed for shares	4,58,333

Step 6: Value per Share

Value per share = $[\frac{Value\ of\ Business}{No.of\ Shares}]$ = 4,58,333/30,000 = 15.28

(b) E.V.A. = NOPAT – COCE

NOPAT = Net Operating Profit after Tax

COCE = Cost of Capital Employed

COCE = Weighted Average Cost of Capital x Average Capital Employed

= WACC x Capital Employed

Debt Capital ₹2,000 crores

Equity capital 500 + 7,500 = ₹8,000 crores

Capital employed = 2,000 + 8,000 = ₹10,000 crores

Debt to capital employed = $\frac{2,000}{10,000}$ =0.20

Equity to capital employed = $\frac{8,000}{10,000}$ =0.80

Debt cost before tax 12%

Less: Tax (30% of 12%) <u>3.6%</u>

Debt cost after Tax <u>8.4%</u>

According to capital Asset Pricing Model (CAPM)

Cost of Equity Capital = Risk Free Rate + Beta x Equity Risk Premium

Or

= 9 + 1.05 x ((19-9)

= 9 + 1.05 x 10 = 19.5%

WACC = Equity to CE × Cost of Equity capital +Debt to CE × Cost of Debt

= 0.8 × 19.5% + 0.20 × 8.40%

= 15.60% + 1.68% = 17.28%

COCE = WACC × Capital employed

= 17.28% × 10,000 crores =1728 crores

E.V.A. = NOPAT – COCE

= ₹2,100 – ₹1,728 = ₹372 crores

24.(a) Calculate the Economic Value added from the following data:

	(₹ crores) Year : 2016
Average debts	**50**
Average equity	**2766**
Cost of debt. Post tax%	**7.72**
Weighted average cost of capital (%)	**16.70**
Profit after tax before exceptional items	**16.54**
Interest after taxes	**5**

(b) Discuss how effectively shareholder value analysis indicates the creation of economic value for shareholders.

Answer:

(a) EVA Calculation:

1. Average debts	50
2. Average Equity	2766
3. Average capital (1 + 2)	2816
4. Cost of debt, post tax %	7.72

5. Cost of Equity %	16.70
6. Weighted Avg. cost of Capital %	16.54
7. COCF (3) x (6)	166
8. Profit after tax before exceptional items	1541
9. Add. Int. after taxes	5
10. Net operating profits after taxes	1546
11. COCE	466
12. EVA (10 – 11)	1080

(b) Shareholder value analysis focuses on the creation of economic value for shareholders, as measured by the share price performance and the flow of dividends. Under shareholder value analysis key decisions with implications for cash flow and risk are specified.

These will be decisions that impact upon value drivers, factors that have the greatest impact on shareholder value, such as sales growth rate, profit margin, working capital investment and the required rate of return under the model.

Corporate value: PV of free cash flows + Current value of marketable securities and other non-operating investments.

And Share holder value = Corporate value – debt.

25.(a) Distinguish between equity value and enterprise value of a company.
(b) Explain the steps in Valuation of Brand.

Answer:
(a) While both equity value and enterprise value serve the purpose of putting a value on the company, they are calculated differently and give a slightly different picture of the company's price tag.

The equity value / market cap is defined simply as the total value of all outstanding stock for the company. Since the ownership of a public company lies in its outstanding shares, the theoretical price to buy the entire company would be the price of a single share of stock multiplied by the number of shares currently outstanding.

The enterprise value jumps off the back of the equity value and calculates what the company is worth net of the amount of cash and debt that the company has on its balance sheet. This is important to look at since, if anyone were to actually buy an entire company, they inherit both the cash and the debt of the company.

Valuation of Equity / Equity Value = Common Shares Outstanding × Share Price

Enterprise Value = Equity Value – Cash + Debt + Minority Interest + Preferred Stock

(b) Steps in Valuation of Brand:

(i) Market segmentation: Brands influence customer choice, but the influence varies depending on the market in which brand operates. For valuation we need to split brand's market into non-overlapping and homogeneous groups of consumers according to applicable criteria such as product or service, distribution channels, consumption patterns, purchase sophistication, geography existing and new customers and so on. The brand is valued in each segment and the sum of the segments constitutes the total value of the brand.

(ii) Financial analysis: Identify and forecast revenue and earnings from intangibles generated by the brand for each of the distinct segments determined in step – 1. Intangibles earnings are defined as brand revenue less operating costs, applicable taxes and a charge for the capital employed. The concept is similar to the economic profit.

(iii) Demand analysis: Assess the role that the brand plays in driving demand for products and services in the markets in which it operated and determine what proportion of intangible earning is attributable to the brand measured by an indicator referred to as the 'role of branding index'. The role of branding index represents the percentage of intangible earnings that are generated by the brand. Brand earnings are calculated by multiplying the role of branding index by intangible earnings.

(iv) Competitive benchmarking: Determine the competitive strengths and weakness of the brand to derive the specific brand discount rate that reflects the risk profile of its expected future earnings. This comprises extensive competitive benchmarking and a structured evaluation of the brand's market, stability, leadership position, growth trend, support geographic footprint and legal protect ability.

(v) Brand value measurement: Brand value is the net present value (NPV) of the forecast brand earnings, discounted by the brand discount rate. The NPV calculation comprises both the forecast period and the period beyond, reflecting the ability of brands to continue generating future earnings.

This computation is useful for brand value modeling in a wide range of situations, viz.,

- Predicting the effect of marketing and investment strategies;
- Calculating the return on brand investment;
- Calculating the return on brand investment;
- Focus it as an icon of quality and customer loyalty;
- Assessing opportunities in new or unexpected markets; and
- Tracking brand value management and its consequential effect on business value and overall corporate image.

26. J Co. Ltd. is studying the possible acquisition of K Co. Ltd., by way of merger. The following data are available in respect of the companies:

Particulars	**J Co. Ltd.**	**K Co. Ltd.**
Earnings after tax (₹)	**80,00,000**	**24,00,000**
No. of equity shares	**16,00,000**	**4,00,000**
Market value per share (₹)	**200**	**160**

(i) If the merger goes through by exchange of equity and the exchange ratio is based on the current market price. What is the new earning per share for J co. Ltd?

(ii) K Co. Ltd. wants to be sure that the earnings available to its shareholders will not be diminished by the merger. What should be the exchange ratio in that case?

Answer:

(i) Calculation of new EPS of J Co. Ltd.

No. of equity shares to be issued by J Co. Ltd. to K Co. Ltd.

= 4,00,000 shares × ₹1.6/₹2.0 = 3,20,000 shares

Total No. of shares in J Co. Ltd. after acquisition of K Co. Ltd.

= 16,00,000 + 3,20,000 = 19,20,000

Total earnings after tax [after acquisition]

= 80,00,000 + 24,00,000 = 1,04,00,000

$$\text{EPS} = \frac{₹\,1,04,00,000}{19,20,000 \text{ equity shares}} = ₹5.42$$

(ii) Calculation of exchange ratio which would not diminish the EPS of K Co. Ltd. after its merger with J Co. Ltd.

Current EPS:

$$\text{J Co. Ltd.} = \frac{₹80,00,000}{16,00,000 \text{ equity shares}} = ₹5$$

$$\text{K Co. Ltd.} = \frac{₹24,00,000}{4,00,000 \text{ equity shares}} = ₹6$$

Exchange ratio = 6/5 = 1.20

No. of new shares to be issued by J Co. Ltd. to K Co. Ltd.

= 4,00,000 ×1.20 = 4,80,000 shares

Total number of shares of J Co. Ltd. after acquisition

= 16,00,000 + 4,80,000 = 20,80,000 shares

$$\text{EPS [after merger]} = \frac{₹1,04,00,000}{20,80,000 \text{ shares}} = ₹5$$

Total earnings in J Co. Ltd. available to new shareholders of K Co. Ltd.

= 4,80,000 ×₹5 = ₹24,00,000

Recommendation: The exchange ratio (6 for 5) based on market shares is beneficial to shareholders of 'K' Co. Ltd.

27.(a) From the following data calculate the cost of merger :

(i) when the merger is financed by cash ii)when the merger is financed by stock

Particulars	*Firm A*	*Firm B*
Market price per share (`)	**60**	**15**
Number of shares	**1,00,000**	**50,000**
Market value of firm (`)	**60,00,000**	**750000**

Firm A intends to pay ₹10,00,000 cash for B if B's market price reflects only its value as a separate entity.

(b) (i) Why do M & A take place?

(ii) Why do they fail?

Answer:

(a)

(i) Cost of merger when the merger is financed by cash:

Cost of merger = (Cash-MV_B) + (MV_B-PB_B)

Where, MV_B = Market value of share.

PB_B = Intrinsic value of Firm B

= (10,00,000 – 750000) + (750000-750000)

= ₹250000 + 0

= ₹250000.

If cost of merger becomes negative, shareholders of firm A gain higher by acquiring firm B in terms of its market value.

(ii) Cost of merger when the merger is financed by stock:

Cost of merger = α PV_B- PV_B

Where, α PV_B = Value in firm A that firm B's shareholders get.

No. of shares equivalent to ₹10,00,000 = 10,00,000/60

= 16,667

Apparent cost of merger:

16667 shares @ ₹60 = ₹1000000

Less: Value of firm B = ₹750000

Apparent cost of merger = ₹250000

PV_{AB} = PV_A + PV_B

= ₹(6000000 + 750000)

= ₹6750000.

Proportion that Firms B's shareholders get in Firm A's capital structure will be:

α = 16667 / (100000 + 16667)

= 16667 / 116667

= 0.143

True cost of merger = (6750000 x 0.143 – 750000)

= 965250 – 750000

= ₹215250

As apparent cost is more than true cost, merger is beneficial to Firm B.

(b)

(i) Mergers and Acquisitions take place to take advantage of the following:

A Synergy in operating economies - It is considered that total value from combination is greater than the sum of values the component companies independently. The reason is benefits derived from –

- Economies of scale through sharing of central services such as procurement, accounting, financial control, resources management, top level management and control.
- Economies of Vertical Integration by moving both forward (towards the customer) and backward (towards supplies of raw materials and inputs).
- Companies having complementary resources.
- Investible surplus funds leading to looking for investment opportunities
- Eliminating inefficiencies by making use of unexploited opportunities to cut cost and improve revenues.

B Taxation advantages-Mergers take place to have benefits of tax laws and a profit earning company may merge with loss making one that will shield the income from taxation.

(ii) Mergers fail mainly due to the following reasons:

(A) Lack of integration synergies.
(B) Key employees leaving the merged organization.
(C) Lack of common goals.
(D) Corporate culture dashes.
(E) Paying too much premium.
(F) Poor level of communication both internally and externally.
(G) Lack of sufficient due diligence by the acquiring company.

28.(a) What do you mean by Takeover by Reverse Bid?

(b) The summarized Balance Sheet of K Ltd as on 31st March is given below –

Equity and Liabilities	₹	Assets	₹	₹
Equity Share Capital (2,00,000 @ 10 each)	20,00,000	Fixed Assets		19,00,000
13% Preference Share Capital	1,00,000	Investments		1,00,000
Retained Earnings	4,00,000	Current Assets -		
12% Debentures	3,00,000	Inventories	5,00,000	
Current Liabilities	2,00,000	Debtors	4,00,000	
		Bank	1,00,000	10,00,000
	30,00,000			30,00,000

Negotiations for takeover of K Ltd result in its acquisition by A Ltd. The Purchase Consideration consists of –

A. **₹3,30,000 13% Debentures of A Ltd for redeeming the 12% Debentures of K Ltd.**

B. **1,00,000 12% Convertible Preference Shares in A Ltd for the payment of the Preference Share Capital of K Ltd**

C. **1,50,000 Equity Shares of A Ltd to be issued as its Current Market Price of ₹15.**

D. **A Ltd would meet Dissolution Expenses of ₹30,000.**

E. The break up figures of eventual disposition by A Ltd, of un-required Assets and Liabilities or K Ltd, are: Investments ₹1,25,000; Debtors ₹3,50,000; Inventories R.4,25,000; and Payment of Current Liabilities ₹19,00,000.

The Project is expected to generate yearly Operating CFAT of ₹7,00,000 for 6 yea₹ It is estimated that Fixed Assets of R Ltd, would fetch ₹3,00,000 at the end of 6th year.
The Firms Cost of Capital is 15%.
As a Financial Consultant, comment on the financial prudence of merger decision of A Ltd.

Answer:

(a) Reserve Merger happens when, in order to avail benefit of carry forward of losses which are available according to tax law only to the Company which had incurred them, the profit making company (Target Company, or Big Company) is merged with Companies having Accumulated Losses (Acquirer, or Small Company).

Salient Features:

1. In a 'Reverse Takeover', "Takeover by Reverse Bid" or "Reverse Merger", a smaller Company gains control of a larger one.
2. The entire undertaking of the healthy and prosperous Company (Big Company) is merged and vested in the Sick Company (Small Company) which is non-viable and whose Net Worth has eroded.
3. Reverse Takeover is also applicable to the purchase of a Listed Company by an Unlisted Company with control passing to the Shareholders and Management of the Unlisted Company. This is known as a 'Back Door Listing'.
4. A Reverse Takeover may take place by way of a Pure Equity Acquisition, also called a Share Swap.

To be a "Reverse Merger", the following conditions should be satisfied -

A. Assets of the Transferor company are greater than the Transferee Company,
B. Equity Capital to be issued by the Transferee Company pursuant to the acquisition exceeds its Original Issued Capital, and
C. There is a change of control in the Transferee Company, through the introduction of a minority holder or group of holders.

(b)

1. Computation of Cost of Acquisition of K Ltd.

Particulars	₹
12% Convertible Preference Shares [for payment of Pref. Capital]	1,00,000
Equity Share Capital (1,50,000 Shares × ₹15 per share)	22,50,000
Purchase Consideration	23,50,000
Add: Liabilities = Debentures 3,30,000 + Dissolution Expenses 30,000 + Current Liabilities 1,90,000	5,50,000
Total Outflow	29,00,000
Less: Sale Proceeds of Assets = Investments 1,25,000 + Debtors 3,50,000 +	(9,00,000)

Stock 4,25,000	
Less: Bank Balance (Assumed that Bank Balance is also taken over)	(1,00,000)
Net Outflow on Acquisition	19,00,000

2. Computation of Net Present Value of the Acquisition

Particulars	Year	Cash Flow	PVF @15%	Disc. Cash Flow
Annual Cash Inflow	1 – 6	7,00,000	3.784	26,48,800
Terminal Inflow on sale of fixed assets	6	3,00,000	0.432	1,29,600
Present Value of Total Inflows				27,78,400
Less: Initial Investment on Acquisition	0	19,00,000	1.000	(19,00,000)
Net Present Value of Investment in K Ltd				8,78,400

Observation: Acquisition of K Ltd yields a Net Present Value of ₹8.78 Lakhs on an Investment of ₹19 Lakhs. Therefore, decision to acquire K Ltd is financially prudent.

29.(a) The chief executive of a Company thinks that shareholders always look for the earnings per share. Therefore, he considers maximization of the earning per share (EPS) as his Company's objective. His company's current net profit are ₹80 lakhs and EPS is ₹4. The current market price is ₹42. He wants to buy another firm which has current income of ₹15.75 lakhs, EPS of ₹10.50 and the market price per share of ₹85. What is the maximum exchange ratio which the chief executive should offer so that he could keep EPS at the current level? If the chief executive borrows funds at 15 per cent rate of interest and buys out the other Company by paying cash, how much should he offer to maintain his EPS? Assume a tax rate of 52%.

(b) A financial analyst has been asked to appraise N LTD. an IT company in terms of the future cash generating capacity. He has projected the following after – tax cash flows:

Year	**1**	**2**	**3**	**4**	**5**
Cash Flows (₹ In Lakhs)	**352**	**96**	**128**	**172**	**234**

It is further estimated that beyond 5th year, cash flows will perpetuate at a constant growth rate of 7% per annum, mainly on account of inflation. The perpetuate cash flows is estimated to ₹2,052 lakhs at the end of the 5th year.

Additionally the following informations are available:

(1) The cost of capital is 20%

(2) The company has outstanding debt of ₹ 724 lakhs and cash /bank balance of ₹ 542 lakhs.

(3) The number of outstanding shares of the company is 30.30 lakhs.

Requirements:

(I) What is the value of N LTD. in terms of expected future cash flows?

(II) Calculate the value of shareholders.

(III) The company has received a takeover bid of ₹402 per share. Is this good offer?

Answer:

(a)

(Amount in ₹)

Current data	Acquiring company	Target company
Net profit	80,00,000	15,75,000
EPS	4	10.50
Market price of share	42	85
Number of equity shares	20,00,000	1,50,000

Calculation of Share Exchange Ratio

$\frac{Combined\ \ net\ profit}{No.of\ \ shares}$ =4

$\frac{80,00,000+15,75,000}{20,00,000+x}$ =4

95,75,000 =80,00,000 + 4x

4x =95,75,000 / 4 = 3,93,750 shares

X = 15,75,000 / 4 = 3,93,750 shares

Share exchange ratio = 3,93,750 shares / 1,50,000 = 2.625

The acquiring company can offer its 2.625 shares against the target company's 1 share.

If funds borrowed @15% interest and buys out the target company by paying cash, and maintain the same level of EPS as before.

$\frac{80,00,000+15,75,000-0.15\ Debt\ \ (1-0.52)}{20,00,000\ shares}$ = ₹4

95,75,000 – 0.072 Debt = 80,00,000

0.072 Debt = 95,75,000 – 80,00,000

Debt = 15,75,000 / 0.072 = ₹2,18,75,000

∴CFO can offer ₹2,18,75,000 to acquire the target company.

Amount payable to each share in target company:

= ₹2,18,75,000 / 1,50,000 = ₹145.83 per share.

(b)

[Given: (PVIF at 20% for year 1 to 5): 0.833, 0.694, 0.579, 0.482, 0.402.]

(I) Present value of Cash flows for the year 1 to year 5:
352 ×0.833 + 96 × 0.694 + 128 × 0.579 + 172 × 0.482 × 234 × 0.402 = 610.92 Lakh.
Present value of Perpetual Cash flows:
[2052 (1 + 0.07) × 0.402 = 16889.54 × 0.402 [(0.20 – 0.07)] = ₹6789.60 Lakh
VALUE OF THE COMPANY:
₹(610.92 + 6789.60) = ₹7400.52 Lakhs

(II) SHARE HOLDERS VALUE:
₹7400.52 + 542 (Cash / Bank Balance) – 724 (Outstanding debt) = ₹7218.52 Lakh.
The number of outstanding share of the company is 30.30 lakh.

(III) VALUE PER SHARE:
7218.52 / 30.30 = 238.23

This is much lower than the takeover bid value (₹402) thus the Bid value is good offer from the point of view of the company.

30.(a) R Ltd. is considering a takeover of S Ltd. The particulars of 2 companies are given below:

Particulars	R Ltd.	S Ltd.
Earnings After Tax (₹)	**20,00,000**	**10,00,000**
Equity shares (No.)	**10,00,000**	**10,00,000**
EPS (₹)	**2**	**1**
P/E ratio (times)	**10**	**5**

Required:

(I) What is the market value of each company before merger?

(II) Assuming that the management of R estimates that the shareholders of S will accept an offer of one share of R for four share of S. If there are no synergic effects, what is the market value of the post-merger R? What is the new price for share? Are the shareholders of R better or worse off than they were before the merger?

(III) Due to synergic effects, the management of R estimates that the earnings will increase by 20%.

What is the new post-merger EPS and price per share? Will the shareholders be better off or worse off than before the merger?

(b) Write a short note on impact of Merger on Value of Shares.

Answer:

(a)

(I) Market value of companies before merger

Particulars	R	S
EPS (₹)	2	1
P/E ratio	10	5
Market price per share (₹) (EPS × P/E ratio)	20	5
Equity shares (No.)	10,00,000	10,00,000
Total market value (MPS × No. of EQ. shared)	2,00,000	50,00,000

(II) Post merger effect on R

Particulars	₹
Post merger earnings ₹ (20,00,000 + 10,00,000)	30,00,000
Equity shares 910,00,000 + 10,00,000 × 1/4)	12,50,000
EPS:	2.4
P/E ratio	10.00
Market price per share (₹) 9EPS × P/E ratio) i.e., 10 × 2.4	24
Total Market Value (MPS × No. of Eq. shares) i.e., (12,500 × 24)	3,00,00,000

Gains from Merger

Particulars	₹
Post Merger Market Value of the firm	30,00,000
Less : Pre-Merger Market value	
R 2,00,00,000	
S 50,00,000	₹2,50,00,000
	₹50,00,000

Apportionment of Gains between shareholders

Particulars	R	S
Post merger market value		
10,00,000 × 24	2,40,00,000	5
2,50,000 × 24		60,00,000
Less: Pre merged market value	2,00,00,000	50,00,000
	40,00,000	10,00,000

Thus the shareholders of both the Co. have gained from merger

(III) Post Merger Earnings

Increase in earnings by 20%

New earnings: ₹30,00,000 × 120% = 36,00,000

No. of equity share = 12,50,000

EPS = ₹36,00,000 ÷ 12,50,000 = ₹2.88

P/E ratio = 10

Market price per share = ₹2.88 × 10 = ₹28.80

∴ Hence, shareholders will be better off than before the merger situation.

(b) Shareholder Value Analysis (SVA) focuses on the creation of economic value for shareholders, as measured by share price performance and flow of funds.

Shareholder Value is used to link management strategy and decision to the creating of value for shareholders.

Value Drivers: Factors or value Drivers which influence the shareholder's value are identified.

Example: Growth in sales, profit Margin, Capital Investments Decisions, etc.

Management Responsibilities: Management should pay attention to Value drivers, while taking investment and finance decisions.

Benefits:

1. SVA helps the management to concentrate on activities which create value to the shareholders rather than on short –term profitability.
2. SVA and EVA together helps to strengthen the competitive position of the Firm, by focusing on wealth creation.
3. They provide an objective and consistent framework of evaluation and decision – making across all function, departments and units of the Company.