MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

Course Contents:

Unit I: (6 hours)

Introduction to managerial economics, consumer behaviour, demand, demand analysis, demand forecasting, supply, supply analysis.

Unit II: (7 hours)

Theory of production, production functions, concept of cost, cost analysis, break even analysis.

Unit III: (6 hours)

Market structure-monopoly, oligopoly, monopolistic, prefect market; Types of business organizations- sole proprietorship, partnership, private ltd. Companies and public ltd. Companies, formation of company.

Unit IV: (8 hours)

Introduction to capital, capital sources, capital budgeting- NPV, IRR, Payback period, profitability index.

Unit V: (8 hours)

Introduction to financial accounting, rules of debit-credit, Double-Entry Book Keeping, Journal, Ledger, Trial Balance- Final Accounts (Trading Account, Profit and Loss Account and Balance Sheet with simple adjustments, Preparation of final account and other related accounting statements.

Unit VI: (10 hours)

Financial statements, comparative statement analysis, common- size statement analysis, ,ratio analysis.

Text book:

1. 1. Aryasri, A. R., *Managerial Economics & Financial Analysis*, McGraw Hill, 2014.

Reference Books:

1. Siddiqui., *Managerial Economics & Financial Analysis*, 2e, New Age International Private Limited, 2017.

2. . Pandey, I.M., "*Financial Management*", 11e, Vikas Publishing House, 2015.

3. . Prasanna Chandra., "*Financial Management: Theory and Practice*", 9e, Mc Graw Hill Education, 2015.

UNIT-1

Economics is a study of human activity both at individual and national level. The economists of early age treated economics merely as the science of wealth. Every one of us in involved in efforts aimed at earning money and spending this money to satisfy our wants such as food, Clothing, shelter, and others. Such activities of earning and spending money are called "Economic activities".

It was only during the eighteenth century that Adam Smith, the Father of Economics, defined economics as the study of nature and uses of national wealth'.

Dr. Alfred Marshall, one of the greatest economists of the nineteenth century, writes "Economics is a study of man's actions in the ordinary business of life: it enquires how he gets his income and how he uses it".

Microeconomics

The study of an individual consumer or a firm is called microeconomics (also called the Theory of Firm). Micro means 'one millionth'. Microeconomics deals with behaviour and problems of single individual and of micro organization.

Macroeconomics

The study of 'aggregate' or total level of economic activity in a country is called macroeconomics. It studies the flow of economics resources or factors of production (such as land, labour, capital, organisation and technology) from the resource owner to the business firms and then from the business firms to the households. Though macroeconomics provides the necessary framework in term of government policies etc.

Management

Management is the science and art of getting things done through people in formally organized groups. Management includes a number of functions: Planning, organizing, staffing, directing, and controlling.

Introduction to Managerial Economics

Managerial Economics as a subject gained popularity in USA after the publication of the book "Managerial Economics" by Joel Dean in 1951.

Managerial Economics refers to the firm's decision making process. It could be also interpreted as "Economics of Management". Managerial Economics is also called as "Industrial Economics" or "Business Economics".

Managerial economics is the application of economics theory and methodology to business and administrative decision making. More especially managerial economics relates to the use of tools and techniques of economic analysis to analyse and solve managerial problem.

Managerial economics is the study of allocation of resources that are available to a business firm. It heavily draws from economics.

Definitions of Managerial Economics

Managerial economics consists of the use of economic models of thought to analyse business situations.- M.C.Nair & Meritum.

Managerial economics is "The integration of the economic theory with business practice for the purpose of facilitating decision making and forward planning by management.- Milton.H. Spenser and Siegelman.

Brigham and Pappas believed that managerial economics is the application of economic theory and methodology of business administration practice.

Michel.R. Baye defines "Managerial Economics is the study of how to direct scare resources in a way that must efficiently achieves a managerial goal".

Characteristics of Managerial Economics

- Managerial Economics is an application of economic theory specially micro economic analysis to solve business problems.
- Managerial Economics facilitates better managerial despoiling.
- Managerial Economics is concerned with behaviour of the firm.
- Managerial Economics identifies tools with the firm selects best course of action out of various alternatives available to it.
- Managerial Economics is pragmatic. It applies to real business situations.
- Managerial Economics is normative economics rather than positive economics.

Nature of Managerial Economics

Managerial Economics is perhaps youngest of all the social sciences. The following points are nature of managerial economics.

1. Close to Micro Economics: Managerial Economics is concerned with finding the solution for different managerial problems of a particular firm.

2. Normative Statements: It usually includes the word "ought or should ". The statements are based on valued judgements and expressed views of what is "good or bad and right or wrong".

3. Applied in nature: Models are built to reflect the real life complex business situations and these models are immense help to managers for decision making.

4. Operates against the backdrop of macro economics: The macro economics of the economy are also seen as limiting factors for the firm to operate.

5. Inter Disciplinary: The contents tools and techniques of managerial economics are drawn from different subjects such as mathematics, economics, statistics, psychology, sociology, management and organisation behaviour and operation research etc.

6. Managerial economics is provides an opportunity to evaluate each alternatives in terms of its cost and revenues.

Scope of Managerial Economics

The main focus in managerial economics is to find an optimal solution to a given problem. The problem may be relate to production , reduction or control of cost, determination of price of a given product or service, make or buy decisions, inventory decisions and managements , investment decision or HRM.

The following aspects fall under the scope of managerial economics.

I. Demand Analysis
II. Cost and Production Analysis
III. Pricing
IV. Profit Planning
V. Capital Management

I. Demand Analysis: Major part of managerial economics is concerned with estimation of demand, impact of various factors on demand and demand determinants.

II. Cost and Production Analysis: Cost estimates are essential for any business firm. Production analysis is more in physical terms, while cost analyses usually in monetary terms.

III. Pricing: The price is which yields revenue to the firm. Correct price decisions are the key to the success of any business firm.

IV. Profit Planning: The main objective of any business firm is to make profits. Profit planning is the most important aspects in managerial economics.

V. Capital Management: By capital management we are planning and control of capital expenditure. Efficiency of managerial economist lies in selection of projects, estimation of return and cost of capital.

Main Areas of Managerial Economics

Demand analysis: The analysis and forecasting of demand for a given product and service is the first task of the managerial economist. The impact of changes in prices, income levels and price of alternative products or services are assessed and accordingly the decisions are taken to maximise the profits.

Input output Decisions: The costs of inputs in relation to output are studied to optimise the profits. Production function and cost function are estimated given certain parameters. The behaviour of cost function at different levels of production is assessed.

Price output Decision: Here the production is ready and the task is to determine price these in different market situations. Such as perfect market, imperfect market ranging from monopoly, monopolistic, oligopoly and duopoly. The pricing policies, methods, strategies and practices constitute crucial part of the study of managerial economics.

Investment Decisions: These are also called capital budgeting decisions. These involve commitment of large funds which determines the fate of the firm. The allocation and utilisation of investments is important to study the cost of capital, choice of capital structure and investment projects before the funds are committed.

Economic Forecasting and Forward Planning: Economic forecasting leads to forward planning. The firm operates in an environment which is dominated by the internal and external factors.

Managerial Economics relates with other subjects/ Managerial Economics as an Inter Disciplinary

Managerial economics is closely linked with many other subjects given below

1. Economics
2. Operation Research
3. Mathematics
4. Statistics
5. Accountancy
6. Psychology
7. Organisation Behaviour

1. Economics:

The concept of Managerial Economic is basically economic concept. If economics deals with theoretical concepts, managerial economics is the application of these in real life.

In the process of addressing various managerial problems, several empirically estimated functions such as demand function, revenue function and so on are extensively used in managerial economics. Economics and managerial economics are concerned with scarcity and resource allocation.

2. Operation Research:

Decision making is the main focus in operation research and managerial economics. Managerial economics are focuses on solving problems. In other words operation research is the tool for finding the solution for many managerial problems.

Model building is one area of common exercise, the operation research models such as linear programming, queuing, transportation, optimization and so on are extensively used in solving the managerial problems.

3. **Mathematics**:

Managerial economics is concerned with estimating and predicting the relevant economic factors for decision making and forward planning. In this process he extensively makes use of tools such as Vector plus, input-output tables, Algebra, calculus and such others.

Mathematics facilitates derivation and exposition of economic analysis.

4. Statistics:

Statistics deals with different techniques useful to analyze the Cause and effect relationship in a given variable or phenomenon. It also empowers the managers to deal with the situations of risk and uncertainty through techniques such as probability, averages, correlation, regression, time series, interpolation and so on. These tools enhance the relevance of conceptual base in managerial economics.

5. Accountancy:

The accountant provides accounting information relating to cost and revenues, receivables, payables, profit or losses. This forms authenticating data about the performance of the firm. The main objective of accounting function is to record, classify and interpret the given accounting data.

6. Psychology:

Consumer psychology is the basis on which managerial economics acts upon. How the customers react to a given change in price or supply and its consequential effects on demand. As profits is the main focus of studying in managerial economics. Psychology contributes towards understanding the behaviourial implications, attitudes and motivation of each of the micro economic variables such as consumer supply or seller, investor, worker or an employee.

7. Organization Behaviour:

Organization behaviour enables the managerial economist to study and develop behavior models of the firm, integrating the manager's behavior with that of owners.

Basic Economic Tools Used in Managerial Economics:

The economic theories and concepts help the managerial economist in taking scientific decisions and business planning. The basic concepts which provide the basis for managerial economics are the following

1. Opportunity Cost Principle
2. Incremental Cost Principle

3. Equi-Marginal Cost Principle
4. Time perspective Principle
5. Discounting Principle

1. Opportunity Cost Principle: Decision Making is defined as solution of one course of action out of various alternatives available. The opportunity cost of one decision is the sacrifice of next best alternative course of action available.

Illustration:

Suppose a piece of land can be used for growing either Wheat or Sugar cane. If decision is taken to grow sugar it implies that wheat production is scarified.

2. Incremental Cost Principle: Incremental concept is closely related to the marginal cost and marginal revenues of economic theory.

The two major concepts in this analysis are incremental cost and incremental revenue. Incremental cost denotes change in total cost, whereas incremental revenue means change in total revenue resulting from a decision of the firm.

Illustration:

Suppose a new order is estimated to bring in an additional revenue of Rs. 10,000. The costs are estimated as under:

Labour Rs. 3,000

Materials Rs. 4,000

Overhead charges Rs. 3,600

Selling and administrative expenses Rs. 1,400

Full Cost Rs.12, 000

The order appears to be unprofitable. For it results in a loss of Rs. 2,000.

However, suppose there is idle capacity which can be utilised to execute this order. If order adds only Rs. 1,000 to overhead charges and Rs. 2000 by way of labour cost because some of the idle workers already on the pay roll will be deployed without added pay and no extra selling and administrative costs, then the actual incremental cost is as follows:

Labour Rs. 2,000

Materials' Rs. 4,000

Overhead charges Rs. 1,000

Total Incremental Cost Rs. 7,000

In this position firm is profitable of Rs.3000/-

3. Equi-Marginal Concept: One of the widest known principles of economics is the equi-marginal principle. The principle states that an input should be allocated so that value added

by the last unit is the same in all cases. This generalisation is popularly called the equi-marginal.

If, for example, the value of the marginal product of labour in activity A is Rs. 50 while that in activity B is Rs. 70 then it is possible and profitable to shift labour from activity A to activity B. The optimum is reached when the values of the marginal product is equal to all activities. This can be expressed symbolically as follows:

$VMP_{LA} = VMP_{LB} = VMP_{LC} = VMP_{LD} = VMP_{LE}$

Where VMP = Value of Marginal Product.

L = Labour

4. Time perspective Principle: The time perspective concept states that the decision maker must give due consideration both to the short run and long run effects of his decisions. He must give due emphasis to the various time periods.

The economic concepts of the long run and the short run have become part of everyday language. Managerial economists are also concerned with the short run and long run effects of decisions on revenues as well as costs. The main problem in decision making is to establish the right balance between long run and short run.

5. Discounting Concept: This concept is an extension of the concept of time perspective. Since future is unknown and incalculable, there is lot of risk and uncertainty in future. Discounting principle is based on fact that a rupee received in future is not equal to rupee received today.

The process of reducing a future amount to its present value is called as discounting, because the present value is always less than future amount. The interest rate used in the present is generally called as discounting rate.

The concept of discounting is found most useful in managerial economics in decision problems pertaining to investment planning or capital budgeting.

Consumer Behaviour:

Consumer behaviour can be defined as those acts of individuals (consumers) directly involved in obtaining, using, and disposing of economic goods and services, including the decision processes that precede and determine these acts.

Consumer behaviour, also called Buyer Behaviour is the process and act of decision-making of people involved in buying and use products.

According to James F. Engel, Roger D. Blackwell and Paul W. Miniard, "Consumer behaviour refers to the actions and decision processes of people who purchase goods and services for personal consumption."

Types of Consumers

The term consumer is often used to describe two different kinds of consuming entities:

1. Personal Consumer:

Personal consumers are those set of consumers who buys goods/ services for their own consumption or for their own use, household products or as a gift for near and dear ones. In each of this type if you notice product is bought for final use. Examples of such products are hair oil, shampoo, and all other FMCG products.

2. Organizational Consumer:

Organizational consumers are the second type of consumers. Players from all the sectors are organizational consumer for example in primary sector a poultry firm owner has to buy seeds in bulk to feed chickens, in secondary sector a furniture making manufacturing unit has to buy woods in bulk or heavy machinery to make the final set of furniture's, in service sector airline industry heavily depend on petroleum industry.

Who is a consumer?

Any individual who purchases goods and services from the market for his/her end-use is called a consumer.

In simpler words a consumer is one who consumes goods and services available in the market.

What is consumer interest?

Every customer shows inclination towards particular products and services. Consumer interest is nothing but willingness of consumers to purchase products and services as per their taste, need and of course pocket.

Why do you think an individual buys a product?

(i) Need

(ii) Social Status

(iii) Gifting Purpose

Why do you think an individual does not buy a product?

(i) No requirement

(ii) Income/Budget/Financial constraints

(iii) Taste

Following are the sources of information:

a. Personal Sources

b. Commercial Sources

c. Public Sources

d. Personal Experience

Consumer behaviour theory

Broadly, these can be classified as:

- Economic theories
- Psychological theories
- Psycho-analytical theories
- Socio cultural theories

Economic Theories

Consumer behaviour seeks to explain how a consumer distributes her income across various purchases and how pricing is a deciding factor.

Psychological theories

This believes that people learn from their experience and this will determine how they act in future. People tend to remember the most frequent and recently experienced stimuli and respond to it. Advertisements take advantage of this.

The cognitive theory deals with post-buying behaviour and states that stimulation and want are influenced by the consumer's awareness, beliefs, perception and attitude.

Psycho-analytic theories

Under this theory, Freud gives personality three aspects: the id, the ego and super ego and states that consumer behaviour is a result of the interaction between these three. While the "id" triggers pleasure, the super ego sees the moral issues and the ego is the go between, helping the consumer decide whether to buy or not.

Socio cultural theories

Also called the veblenian model, it labels man as a social animal whose wants and behaviour are shaped by his peer group. Regardless of personal preferences, people tend to blend in a society. These theories on consumer behaviour help to marketers gain an insight into what factors lead their target audience to make their buying decisions so that they can develop their marketing message accordingly.

Factors affecting consumer behaviour

As a consumer goes through the process of choosing, buying and consuming goods and services based on wants, various factors influence the decision making process. These are:

- Cultural
- Personal
- Psychological

Cultural factors

These include culture, subculture and social class. Since the buyer is part of a society, her decisions are affected by it. Subculture refers to religion, nationality, region, race, and similar factors that facilitate market segmentation, so that products can be tailored to these segments.

Personal factors

Among personal factors that determine buying behaviour are economic level, lifestyle, age group, personality, occupation and self-concept. Since each person is unique, personality varies and plays a role in the buying process.

Psychological Factors

Four psychological factors, namely perception, motivation, learning, attitude and beliefs affect buyer behaviour. Each individual is motivated by a different set of physiological, biological and social needs.

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DEMAND ANALYSIS

CONCEPT OF DEMAND:

Demand in common parlance means the desire or want for an object. Every want supported by the willingness and ability to buy constitutes demand for particular product or service. According to Stonier and Hague, “Demand in economics means demand backed up by enough money to pay for the goods demanded”.

Demand = Desire+ Ability to pay + willingness to spend

Eg: If I want a car and cannot pay for it, there is no demand for the car from my side.

Nature and types of demand:

1. Consumer goods Vs Producer goods: Consumer goods refer to such products and services which are capable of satisfying human needs. Consumer goods are those which are available for ultimate consumption. They give direct and immediate satisfaction, such as bread, rice, apple and so on.

Producer goods are those which are used for further processing or production of goods/services to earn income. For instance tractor, machinery looms so on. Producer goods give indirect satisfaction.

2. Individual and Market Demand: Individual demand can be defined as a quantity demanded by an individual for a product at a particular price and within the specific period of time. For example, Mr. X demands 200 units of a product at Rs. 50 per unit in a week.

The individual demand of a product is influenced by the price of a product, income of customers, and their tastes and preferences. On the other hand, the total quantity demanded for a product by all individuals at a given price and time is regarded as market demand.

3. Organization and Industry Demand: The demand for the products of an organization at given price over a point of time is known as organization demand. For example, the demand for Toyota cars is organization demand. The sum total of demand for products of all organizations in a particular industry is known as industry demand.

4. Autonomous and Derived Demand: The demand for a product that is not associated with the demand of other products is known as autonomous or direct demand. The autonomous demand arises due to the natural desire of an individual to consume the product.

For example, the demand for food, shelter, clothes, and vehicles is autonomous as it arises due to biological, physical, and other personal needs of consumers.

On the other hand, derived demand refers to the demand for a product that arises due to the demand for other products.

For example, the demand for petrol, diesel, and other lubricants depends on the demand of vehicles.

5. Demand for Perishable and Durable Goods: The goods are divided into two categories, perishable goods and durable goods. Perishable or non-durable goods refer to the goods that have a single use. For example, cement, coal, fuel, and eatables. On the other hand, durable goods refer to goods that can be used repeatedly.

For example, clothes, shoes, machines, and buildings. Perishable goods satisfy the present demand of individuals. However, durable goods satisfy both present as well as future demand of individuals.

6. Short-term and Long-term Demand: Short-term demand refers to the demand for products that are used for a shorter duration of time or for current period. This demand depends on the current tastes and preferences of consumers.

For example, demand for umbrellas, raincoats, sweaters, long boots is short term and seasonal in nature.

On the other hand, long-term demand refers to the demand for products over a longer period of time.

Law of Demand

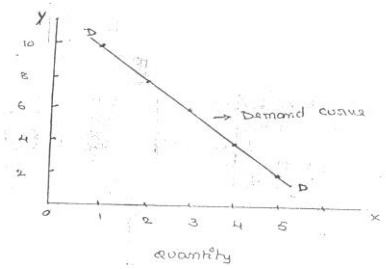
Law of demand states that other things remaining constant "the amount of quantity demanded rises with every fall in the price and vice-versa".

The law of demand may be explained with the help of the following demand schedule.

Demand Schedule.

Price of Apple (In. Rs.)	Quantity Demanded
10	1
8	2
6	3
4	4
2	5

When the price falls from Rs. 10 to 8 quantity demand increases from 1 to 2. In the same way as price falls, quantity demand increases on the basis of the demand schedule we can draw the demand curve.



The demand curve DD shows the inverse relation between price and quantity demand of apple. It is downward sloping.

Assumptions*:*

Law is demand is based on certain assumptions:

1. This is no change in consumers taste and preferences.
2. Income should remain constant.
3. Prices of other goods should not change.
4. There should be no substitute for the commodity
5. The demand for the commodity should be continuous
6. People should not expect any change in the price of the commodity

Law of demand and its exceptions or Exceptional goods of law of demand:

1. Giffen paradox: People whose incomes are low purchase more of a commodity such as broken rice, bread etc., when its price rises. Conversely when its price falls instead of buying more, they buy less of this commodity and use the saving for the purchase of better goods such as meat. This phenomenon is called Giffens paradox.

2. Veblen or Demonstration effect: The goods are associated with the name of Veblen who proposes the Law of conspicuous consumption theory. Rich buy goods because they offer social distinction and they have snob appeal.

3. Speculative effect: In a speculative market (such as the stock market), a rise in the price of a commodity (such as, share) creates an impression among buyers that its price will rise further. So people start buying more of a share when its price rises.

4. Essential goods or Necessaries: The goods which are fulfil the basic needs and are consumed by all the persons in the society. For example salt, if salt price increase and demand of salt increases.

5. Ignorance: At times the customers may not keep track of changes in price. In such case he tends to buy even if there is increase in price.

ELASTICITY OF DEMAND

Elasticity of demand explains the relationship between a change in price and consequent change in amount demanded. “Marshall” introduced the concept of elasticity of demand. Elasticity of demand shows the extent of change in quantity demanded to a change in price.

Elastic demand: A small change in price may lead to a great change in quantity demanded. In this case, demand is elastic.

In-Elastic demand: If a big change in price is followed by a small change in demanded then the demand is “inelastic”.

Types of Elasticity of Demand:

There are three types of elasticity of demand:

1. Price elasticity of demand
2. Income elasticity of demand
3. Cross elasticity of demand

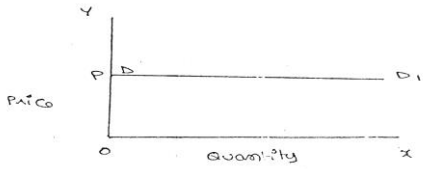
1. Price elasticity of demand:

Price elasticity of demand measures changes in quantity demand to a change in Price. It is the ratio of percentage change in quantity demanded to a percentage change in price.

$$\textbf{Price elasticity (Edp)} = \frac{\text{Proportionate change in the quantity demand of commodity or } (Q_2\text{-}Q_1)/\ Q_1}{\text{Proportionate change in the price of commodity or } (P_2\text{-}P_1)/P_1}$$

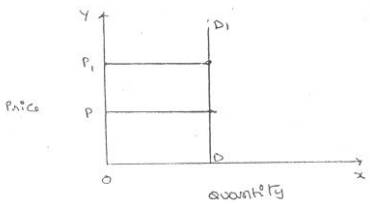
There are five cases of price elasticity of demand

A. Perfectly elastic demand: When small change in price leads to an infinitely large change in quantity demand, it is called perfectly or infinitely elastic demand. In this case E=∞



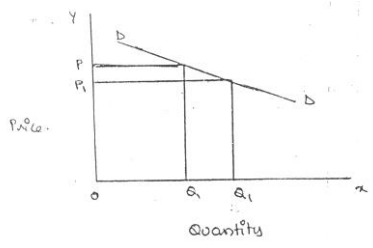
The demand curve DD1 is horizontal straight line. It shows the at "OP" price any amount is demand and if price increases, the consumer will not purchase the commodity.

B. Perfectly Inelastic Demand: In this case, even a large change in price fails to bring about a change in quantity demanded.



When price increases from 'OP' to 'OP$_1$', the quantity demanded remains the same. In other words the response of demand to a change in Price is nil. In this case 'E'=0.

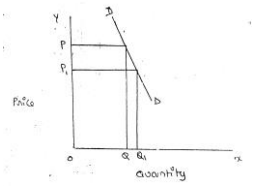
C. Relatively elastic demand: Demand changes more than proportionately to a change in price. i.e. a small change in price leads to a very big change in the quantity demanded. In this case E > 1. This demand curve will be flatter.



When price falls from 'OP' to 'OP$_1$', amount demanded increase from "OQ' to "OQ$_1$' which is larger than the change in price.

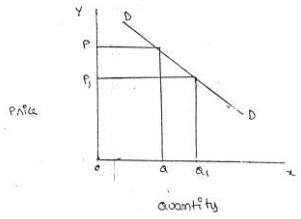
D. Relatively in-elastic demand: Quantity demanded changes less than proportional to a change in price. A large change in price leads to small change in amount demanded.

Here E < 1. Demanded carve will be steeper.



When price falls from "OP' to 'OP1 amount demanded increases from OQ to OQ1, which is smaller than the change in price.

E. Unit elasticity of demand: The change in demand is exactly equal to the change in price. When both are equal E=1 and elasticity if said to be unitary.



When price falls from 'OP' to 'OP1' quantity demanded increases from 'OP' to 'OP1', quantity demanded increases from 'OQ' to 'OQ1'. Thus a change in price has resulted in an equal change in quantity demanded so price elasticity of demand is equal to unity.

2. Income elasticity of demand:

Income elasticity of demand shows the change in quantity demanded as a result of a change in income. Income elasticity of demand may be slated in the form of a formula.

$$\text{Income Elasticity (EDI)} = \frac{\text{Proportionate change in the quantity demand of commodity or } (Q_2\text{-}Q_1)/\ Q_1}{\text{Proportionate change in the income of the people or } (I_2\text{-}I_1)/I_1}$$

3. Cross elasticity of Demand:

A change in the price of one commodity leads to a change in the quantity demanded of another commodity. This is called a cross elasticity of demand. The formula for cross elasticity of demand is:

$$\text{Cross elasticity (EDc)} = \frac{\text{Proportionate change in the quantity demand of commodity "X" or } (Q_2\text{-}Q_1)/\ Q_1}{\text{Proportionate change in the price of commodity "Y" or } (p_2y\text{-}p_1y)/\ p_1y}$$

Factors Affecting Demand:

There are factors on which the demand for a commodity depends. These factors are economic, social as well as political factors. The effect of all the factors on the amount demanded for the commodity is called Demand Function.

These factors are as follows:

Price of the Commodity: The most important factor affecting amount demanded is the price of the commodity. The amount of a commodity demanded at a particular price is more properly called price demand.

Income of the Consumer: The important factor influencing demand is consumer income. In fact, we can establish a relation between the consumer income and the demand at different levels of income.

Prices of related goods: The demand for a commodity is also affected by the changes in prices of the related goods also. Related goods can be of two types:

(i). **Substitutes** which can replace each other in use; for example, tea and coffee are substitutes. The change in price of a substitute has effect on a commodity's demand in the same direction in which price changes.

(ii). **Complementary** goods are those which are jointly demanded, such as Car and petrol/diesel. In such cases complementary goods have opposite relationship between price of one commodity and the amount demanded for the other.

Tastes of the Consumers: The amount demanded also depends on consumer's taste. Tastes include fashion, habit, customs, etc. A consumer's taste is also affected by advertisement. If the taste for a commodity goes up, its amount demanded is more even at the same price.

Population: Increase in population increases demand for necessaries of life. The composition of population also affects demand. Composition of population means the proportion of young and old and children as well as the ratio of men to women.

Government Policy: Government policy affects the demands for commodities through taxation. Taxing a commodity increases its price and the demand goes down. Similarly, financial help from the government increases the demand for a commodity while lowering its price.

Expectations regarding the future: If consumers expect changes in price of commodity in future, they will change the demand at present even when the present price remains the same.

Climate and weather: The climate of an area and the weather prevailing there has a decisive effect on consumer's demand. In cold areas woolen cloth is demanded. During hot summer days, ice is very much in demand. On a rainy day, ice cream is not so much demanded.

Importance of Elasticity of Demand: The concept of elasticity of demand is of much practical importance.

1. Price fixation: Each seller under monopoly and imperfect competition has to take into account elasticity of demand while fixing the price for his product. If the demand for the product is inelastic, he can fix a higher price.

2. Production: Producers generally decide their production level on the basis of demand for the product. Hence elasticity of demand helps the producers to take correct decision regarding the Scale of production to be produced.

3. Distribution: Elasticity of demand also helps in the determination of rewards for factors of production. For example, if the demand for labour is inelastic, trade unions will be successful in raising wages. It is applicable to other factors of production.

4. International Trade: Elasticity of demand helps in finding out the terms of trade between two countries. Terms of trade refers to the rate at which domestic commodity is exchanged for foreign commodities. Terms of trade depends upon the elasticity of demand of the two countries for each other goods.

5. Public Finance: Elasticity of demand helps the government in formulating tax policies. For example, for imposing tax on a commodity, the Finance Minister has to take into account the elasticity of demand.

6. Nationalization: The concept of elasticity of demand enables the government to decide about nationalization of industries.

Demand Forecasting:

Demand forecasting refers to an estimate of future demand for the product. Demand Forecasting entails forecasting and estimating the quantity of a product or service that consumers will purchase in future. Demand Forecasting involves use of various formal and informal forecast techniques.

Demand Forecasting in an estimate of sales during a specified future period based on a proposed marketing plan set of particular uncontrollable and competitive forces. Demand forecasting has an important influence on production planning. It is essential for a firm to produce the required quantities at the right time.

Methods of Demand Forecasting:

Forecasting demand is not an easy exercise it may be easy only in the case of very few products or services. In many cases market demand in general and company in particular change from year to year.

In such a case the determining factor for making success is only a good forecasting technique. Different methods of forecasting demand can be grouped under survey and statistical methods.

Survey Methods:

1. Survey of buyer's intention:

To anticipate what buyers are likely to do under a given set of circumstances, a most useful source of information would be the buyers themselves. It is better to draw a list of all

potential buyers, approach each buyer to ask how much does he plans to buy of the given product at a given point of time under particular conditions.

The survey of buyers can be conducted either by covering the whole population or by selecting a sample group of buyers.

A) Censes method: If the company wishes to clarify the opinion of all buyers. It is also called as total enumeration method. It is not only time taking and also costly.

B) Sample method: The firm can select a group of buyers who can represent the whole population is called as sample method. A survey of buyers based on sample basis can be completed faster with relatively lower cost.

2. Survey of sales force method: The sales people are those who are in constant touch with the main and large buyers of a particular market. The sales force is capable of assessing the likely reactions of the customers of their territories quickly and less costly. Here also there is a danger that sales man may sometimes become biased in their views.

3. Delphi technique: Delphi technique is a variant of the opinion pool and expert opinion. This method consists of an attempt to arrive at consensus in an uncertain area by questioning a group of experts. It is highly effective because of the nature of the experts pooled in together.

This technique came to a conclusion about the future forecast in a very short period of the time.

Statistical Methods

Statistical method is used for long run forecasting. In this method, statistical and mathematical techniques are used to forecast demand. This relies on past data.

1. **Trend projection method:** these are generally based on analysis of past sales patterns. These methods dispense with the need for costly market research because the necessary information is often already available in company files. This method is used in case the sales data of the firm under consideration relate to different time periods, i.e., it is a time series data. There are five main techniques of mechanical extrapolation.

   a. **Trend line by observation:** this method of forecasting trend is elementary, easy and quick. It involves merely the plotting of actual sales data on a chart and them estimating just by observation where the trend line lies. The line can be extended towards a future period and corresponding sales forecast is read form the graph.
   b. **Least squares methods:** this technique uses statistical formulae to find the trend line which best fits the available data. The trend line is the estimating equation, which can be used for forecasting demand by extrapolating the line for future and reading the corresponding values of sales on the graph.
   c. **Time series analysis:** The time series relating to sales represents the past pattern of affecting demand for a particular product, such data can be presented either in

tabulation form or graphical form for further analysis. This method is popular because it is simple and inexpensive. Time series data of an exhibit a persistent growth trend there are preliminary four sets of factor which are responsible for the characterization of time series by fluctuations and turning points on a time series trend.

d. **Moving average method:** this method considers that the average of past events determine the future events. In other words, this method provides consistent results when the past events are consistent and unaffected by wide changes.

e. **Exponential smoothing:** this is a more popular technique used for short run forecasts. This method is an improvement over moving averages method, unlike in moving averages method, all time periods here are given varying weight, that is, value of the given variable in the recent times are given higher weight and the values of the given variable in the distant past are given relatively lower weights for further processing.

f. **Barometric Technique:** Simple trend projections are not capable of forecasting turning points. Under Barometric method, present events are used to predict the directions of change in future. This is done with the help of economics and statistical indicators. Those are (1) Construction Contracts awarded for building materials (2) Personal income (3) Agricultural Income. (4) Employment (5) Gross national income (6) Industrial Production (7) Bank Deposits etc.

g. **Simultaneous equation method:** in this method, all variable are simultaneously considered, with the conviction that every variable influence the other variables in an economic environment. Hence, the set of equations equal the number of dependent variable which is also called endogenous variables.

h. **Correlation method:** correlation and regression methods are statistical techniques. Correlation describes the degree of association between two variables such as sales and advertisement expenditure. When the two variables tend to change together, then they are said to be correlated.

i. **Regression method:** it identifies the relationship between two or more variables. A dependent variable whose value is to be predicted and an independent variable about which knowledge is available. This technique is used to find the equation the represents the relationship between variables.

Other Methods:

Expert opinion methods: Well informed persons are called experts; experts constitute yet another source of information. These persons are generally the outside experts and they do not have any vested interest in the results of a particular survey. The service of an expert could be advantageously used when a firm uses general economic forecasting or special industry fore casting prepared outside the firm.

Test marketing: It is likely that opinions given by buyers, salesman or other experts may be, at times, misleading. This is the reason why most of the manufactures favour to test their

product or service in a limited market as test runs before they launch their product nationwide.

Controlled experiments: Controlled experiment refers to such exercise where some of the major determinants of demand are manipulated to suit to the customers with different tastes and preferences, income groups, and such others, it is further assumed that all other factors remain the same.

Judgmental approach: When none of the above methods are directly related to the given product or service, the management has no alternative other than using its own judgment.

Supply:

Supply is a fundamental economic concept that describes the total amount of a specific good or service that is available to consumers. Supply can relate to the amount available at a specific price or the amount available across a range of prices.

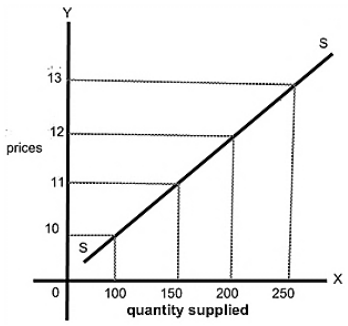
Definition

Supply is the willingness and ability of producers to create goods and services to take them to market. Supply is positively related to price given that at higher prices there is an incentive to supply more, as higher prices may generate increased revenue and profits.

SUPPLY CURVE

The supply curve shows the amount of a good that will be produced at alternative prices. The supply curve expresses the relation between the price charged and the quantity supplied, holding constant the effects of all other variables.

Graphical presentation of supply schedule



The Supply schedule is presented in the graphical form, wherein the quantity Supplied is shown on X axis and the price of the oranges are shown on Y axis.

The supply curve always moves upwards from left to right.

Factors That Influence Supply: The supply of a product in the market is the aggregate amount supplied by individual firms. Individual firms will expand or reduce supply based on

the expected impact on profits. Among the factors influencing the supply of a product, the price of the product itself is often the most important. The following are factors of supply

1. Price of the product
2. Price of related goods
3. Technology

Technology is a key determinant of product supply. The current state of technology refers to the manner in which inputs are transformed into output. An improvement in the state of technology, including any product invention or process innovation that reduces production costs, increases the quantity and/or quality of products offered for sale at a given price.

Law of Supply:

The law of supply may be put in another way. “Other things remaining the same, as the price of a commodity rises, its supply is extended, and as the price falls, its supply is contracted.”

Definition: In the words of **Dooley.** "The law of supply states that other things being equal the higher the price, the greater the quantity supplied or the lower the price, the smaller the quantity supplied."

As the price of good increases, suppliers will attempt to maximize profits by increasing the quantity of the product sold.

Some Exceptions:

There are some exceptions to the law of supply:

(a) In an auction, goods are sold away whatever the bid. It is possible that the seller is badly in need of money and wants a certain amount of it. As soon as that amount is made up, he will refuse to sell more. It is also possible that a person wants to get rid of a quantity of goods as in the case of a person going abroad. In such a case, he will sell away all that he has, whatever the price offered.

(b) When a further heavy fall in price is expected, the sellers may become panicky. They will sell more even if the price falls.

Extension and Contraction, i.e. Movement along the Supply Curve: When the quantity offered for sale increases or decreases merely because price has risen or fallen, we use the terms extension and contraction of supply. The supply schedule is the same and we travel up and down the same supply curve.

Increase and Decrease, i.e., Shift of the Supply Curve: If, on the other hand, the change in the quantity offered for sale is caused, not by a change in price, but by a change in the

conditions of supply. The change in the condition of supply implies a change in the technical conditions: perhaps a new process or a new material has been discovered, a new labour-saving device has been discovered, or raw materials and other factors have become cheaper.

Contraction and decrease in supply are the opposites of extension and increase in supply respectively. Contraction of supply means that less is offered at a lower price, but decrease in supply means that less is offered at the same price or the same quantity is offered at a higher price.

UNIT-II

PRODUCTION AND COST ANALYSIS

Production is a process of converting an input into more valuable output. Moreover, production does not refer to just the physical transformation of resources. It also covers services. Thus a production process also includes acquisition of capital resources, efficient employment of these resources, recruitment and training of employees besides the normal mechanical process of converting raw material into finished goods.

Production Function:

A production function is the technological relationship between the output and its inputs. These inputs are also known as the factors of production. For any production process, the factors of production determine the output.

Production factors are Land, Labour, Capital, Organisation and Technology are the five major determinants of any product of output. Mathematically, this is expressed as:

$$Q = F (L1, L2, C, O, T)$$

Where,

Q is the quantity of production,

F explains the functions, that is, the type of relation between inputs and outputs

L1 is Land

L2 is Labour

C is Capital

O is Organisation

T is Technology

Definitions:

Samuelson define the production function as “the technical relationship which reveals the maximum amount of output capable of being produced by each and every set of inputs”

Michael defines production function as “that function which defines the maximum amount of output that can be produced with a given set of inputs”.

Production Function with One Variable Input/ The Law of Returns/ The Law of Diminishing Returns:

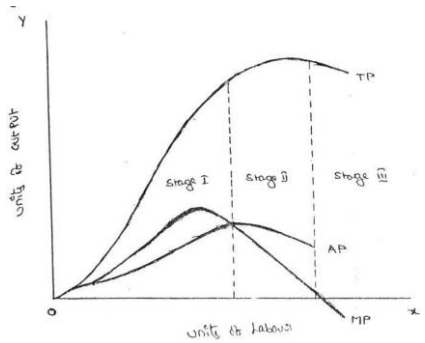
The law of returns states that when at least one factor of production is fixed or factor input is fixed and when all other factors are varied, the total output in the initial stages will increase at an increasing rate, and after reaching certain level or output, the total output will increase at declining rate. If variable factor inputs are added further to the fixed factor input, the total output may decline. The law of returns is also called the law of variable proportions or the law of diminishing returns.

According to **F. Benham**

"As the proportion of one factor in a combination of factors is increased, after a point, first the marginal and then the average product of that factor will diminish".

Output with Fixed Capital and Variable Labour Inputs:

Units of Labour	Total product (TP)	Marginal product (MP)	Average product (AP)	Stages
0	0	0	0	Stages 1
1	10	10-0=10	10	
2	22	12	11	
3	33	11	11	Stages 2
4	40	7	10	
5	45	5	9	
6	48	3	8	Stages 3
7	48	0	6.85	
8	45	-3	5.62	



From the above graph the law of variable proportions operates in three stages. In the first stage, total product increases at an increasing rate. The marginal product in this stage increases at an increasing rate resulting in a greater increase in total product. The average product also increases. This stage continues up to the point

where average product is equal to marginal product. The law of increasing returns is in operation at this stage. The law of diminishing returns starts operating from the second stage onwards. At the second stage total product increases only at a diminishing rate. The average product also declines. The second stage comes to an end where total product becomes maximum and marginal product becomes zero. The marginal product becomes negative in the third stage. So the total product also declines. The average product continues to decline.

Production Function With Two Variable Inputs and Laws Returns

Production process that requires two inputs, capital (C) and Labour (L) to produce a given output (Q). There could be more than two inputs in a real life situation, but for a simple analysis, we restrict the number of inputs to two only. In other words, the production function based on two inputs can be expressed as

$$Q = f(C, L)$$

Where C= Capital, L = Labour,

Normally, both capital and labour are required to produce a product. To some extent, these two inputs can be substituted for each other. Hence the producer may choose any combination of labour and capital that gives him the required number of units of output, for any one combination of labour and capital out of several such combinations. The alternative combinations of labour and capital yielding a given level of output are such that if the use of one factor input is increased , that of another will decrease and vice versa. However, the units of an input foregone to get one unit of the other input changes, depends upon the degree of substitutability between the two input factors, based on the techniques or technology used, the degree of substitutability may vary.

ISO-QUANTS

The term Isoquants is derived from the words “Iso” and “quant”

“Iso” means equal and “quant” implies quantity. Isoquant therefore, means equal quantity. An isoquant curve shows various combinations of two input factors such as capital and labour, which yield the same level of output.

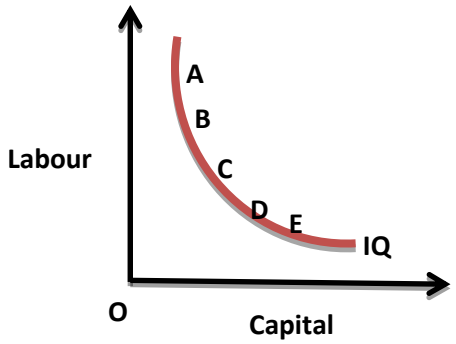
As an isoquant curve represents all such combinations which yield equal quantity of output, any or every combination is a good combination for the manufacturer. Since he prefers all these combinations equally, an isoquant curve is

also called **product indifferent curve**.

An isoquant may be explained with the help of an arithmetical example

Combinations	Capital (Rs. in Lakhs)	No. Of Labourers	Output (Units)
A	1	20	20,000
B	2	15	20,000
C	3	11	20,000
D	4	08	20,000
E	5	06	20,000

Combination "A" represent 20 Labourers and Rs. 1 Lakh of capital and produces "20,000" Units of product all other combinations in the table are assumed to yield the same given output of a product say 20,000 units by employing any one of the alternative combinations of the two factors labour and capital. If we plot all these combinations on a paper and join them, we will get continues and smooth curve called Iso-product curve as shown below.



Capital is on the X-axis and Labour is on the Y-axis. IQ is the ISO-Product curve which shows all the alternative combinations A, B, C, D, E which can produce 20,000 Units of a product

Features of isoquant

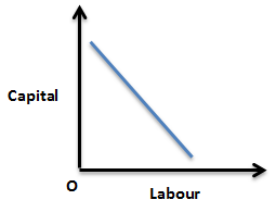
- Downward sloping: isoquant are downward sloping curves because, if one input increase, the other one reduces. There is no question of increase in both the inputs to yield a given output. A degree of substitution is assumed between the factors of production.
- Convex to origin: isoquant are convex to the origin. It is because the input factors are not perfect substitutes. One input factor can be substituted by other input factor in a diminishing marginal rate.

- Do not intersect: two isoquant do not intersect with each other. It is because, each of these denote a particular level of output.
- Do not touch axes: the isoquant touches neither X-axis nor Y- axis, as both inputs are required to produce a given product.

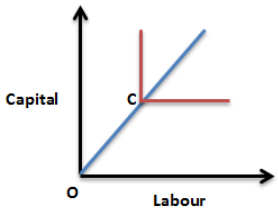
Types of Isoquant:

Definition: An **IsoQuant** curve is the geometrical representation of the different combinations of input factors employed to produce the given level of output.

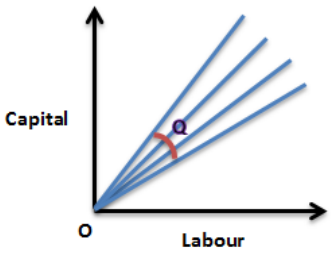
1. **Linear Isoquant Curve**: This curve shows the perfect substitutability between the factors of production. This means that any quantity can be produced either employing only capital or only labour or through "n" number of combinations between these two.



2. **Right Angle Isoquant Curve**: This is one of the types of isoquant curves, where there is a strict complementarity with no substitution between the factors of production. According to this, there is only one method of production to produce any one commodity.

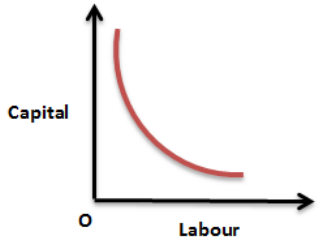


3. **Kinked isoquant Curve:** This curve assumes that there is a limited substitutability between the factors of production. This shows that substitution of factors can be seen at the kinks since there are a few processes to produce any one commodity. Kinked isoquant curve is also known as **activity analysis programming isoquant**.



4. **Convex Isoquant Curve:** This types of isoquant curves, the factors can be substituted for

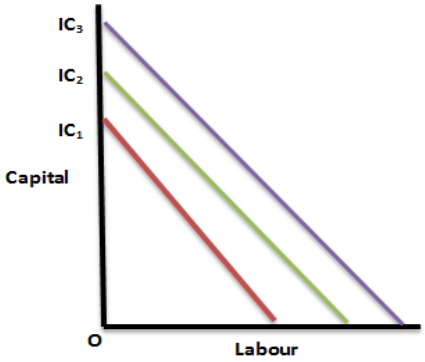
each other but up to a certain extent. This curve is smooth and convex to the origin.



Thus, the classification of the isoquant curve can be done on the basis of the number of labour units that can be substituted for capital and vice-versa, so as to have the same level of production.

ISO COST

Isocost refers to that cost curve that represents the combination of inputs that will cost the producer the same amount of money. In other words, each isocost denotes a particular level of total cost for a given level of production. If the level of production changes, the total cost changes and thus the isocost curve moves upwards, and vice versa.

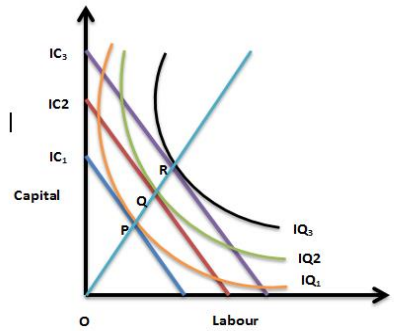


The figure presents three downward sloping straight line cost curves each costing Rs.1 lakh, Rs.1.5 lakh and Rs. 2 lakh for the output level of 20,000, 30,000 and 40,000 units. The total cost as represented by each cost curve is calculated by multiplying the quantity of each input factor with its respective price. Any change in input prices changes the slope of isocost lines.

Least Cost Combination of inputs:

The manufacturer has to produce at lower costs to earn higher profits. The isocosts and isoquants can be used to determine the input usage that minimizes the cost of production.

Where the slope of isoquant is equal to that of isocost, there lies the lowest point of cost of production. This can be observed by the isocost curves on isoquants curves.



The points of P,Q and R on each isoquant curves represents the least cost combination of inputs yields maximum level of output. Any output lower or higher than this will results in higher cost of production. It is evident that the production can be with a total outlay of Rs.1.5 lakh reach highest isoquant curve which is IQ_2. If he wants to reach IQ_3 he has to bring additional resources which is let us asume not possible. He cannot compromise with IQ_1 as it means lower output. So the obvious choice for the producers is Q combination of inputs only on IQ_2.

Marginal Rate of Technical Subtitution (MRTS):

The marginal rateof technical subtitution refers to the rate at which one input factor is substituted with the other to attain a given level of output. In other words the lesser units of one input must be compensated by increeasing amouts of another input to produce the same level of output.

$$\text{MRTS} = \frac{\text{Change in one input}}{\text{Change in other input}}$$

Ratio of MRTS between Capital and Labour

Combinations	Capital (Rs. in Lakhs)	No. Of Labourers	MRTS
A	01	20	---
B	02	15	5:1
C	03	11	4:1
D	04	08	3:1
E	05	06	2:1
F	06	05	1:1

The above table presents the ratio of MRTS between the two input factors. That is capital and labour. All the above combinations of inputs to produce 20,000 units of output. 5 Units decrease in labour are compensated by an increase in 1 unit of capital resulting in a MRTS of 5:1.

Economies of scale:

The economies of scale results because of increase in scale of production. Economies of scale also refer to the saving made in terms of cost of producing each unit of production as a result of increasing size. “Alfred Marshall” divides the economies of scale in two groups that is internal and external.

Internal Economies of scale:

These are those which arise from the expansion of the plant size of the firm. They are specific to the individual firm. These are the unit cost advantages from expanding the scale of production in the long run. They also result in higher profits and lower prices.

Managerial Economies: As the firm expands the firm needs qualified managerial personel to handle each of its functions. Functional specilisation ensures minimum watage and lowers the cost of production.

Commercial Economies: The transactions of buying and selling of raw materials and other supplies are grown as the firm grows. There could be cheaper savings in the procurement, transportation and storage costs.

Financial Economies: There could be cheaper credit facilites from the finanacial institution to meet the capital expenditure or working capital requirements and which can consider reducing the rate of interest on the laons.

Technical Economies: Increase in the scale of production follows when there is sophisticated technology available and the firm is in a postion to hire qualified technical manpower to make use of it.

Marketing Economies: As the firms grows larger and larger it can be afford to maintain a fullfledged marketing departemnt independly to handle the all marketing related issues that is advertising , promotion, surveys etc.,

Risk-Bearing Economies: As there is growth in the size of the firm there is increse in the risk also. The firm can insure its machnery and other assets against the hazard of fire, theft and other risks.

Indivisibilities and automated machinery: To manufacutre goods, a plant of certain minimum capacity is required whether the firm would like to produce and sell at the full capacity or not.

Economies of Large Dimension: Large scale production is required to take advantage of bigger size plant and equipment. Technical economies are available, only from large size

improved methods of production process and when the products are standardised.

Economies of Research and Developement: Large organisations spend heavily on research and developement and bring out several innovative prodcuts.

Example: HUL, Dr.reedy lab

External Economies of Scale: External economies of scale refer to all the firm in the industry because of growth of the firms in the industry as whole. These can be grouped under three types.

Economies of Concentration: All the firms are located at one place, it is likely that there is better infrastructure in terms of transport facilities, banking and communication facilities, avalablitity of skillled labour etc.,

Economies of R& D: All the firms can pool resources together to finance R & D activities and thus share the benefits of research.

Economies of Welfare: An industry is in a position to provide welfare facilities to the workers. It may get land at concessional rates and procure special facilities from local bodies for setting up housing colonies for the workers, health care units, educational institutions both general and technical workers.

Diseconomies of Scale: Diseconomies are the limits to large scale production. It is possible that expansion of a firm's output may lead to rise in costs and thus results diseconomies instaed of economies. The major diseconomies of large scale production are given below

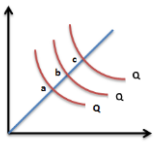
a) **Financial Diseconomies:** For expanding business the entrepreneur needs finance. But finance may not be easily available in the required amount at the appropriate time.
b) **Managerial Diseconomies:** Supervision becomes a difficult job. Workers do not work efficiently, wastages arise, decision making become difficult, coordination between workers and management disappears.
c) **Marketing Diseconomies:** As business is expanding prices of the factors of production will rise. The cost will therefore rise. The demand for the products may fall as a result of change in tastes and preferences of the people.
d) **Technical Diseconomies:** There is a limit to the division of labour and splitting down of production processes. The firm may fail to operate its plant to its maximum capacity.
e) **Diseconomies of Risk taking:** As the scale of production of a firm expands risks also increase with it. Wrong decision by management may adversely affected production.

Law of Returns to Scale: Law of returns to scale refers to the long run analysis of the law of production. In the long run output can be increased by varying all input factors. We study the changes in output as a result of changes in all input factors.

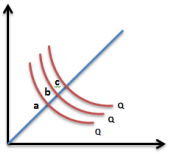
Scale refers to quantity to all factors which are employed in optimal combination for specified outputs. The term returns to scale refer to the degree by which the output changes as a result of a given change in the quantity of all input used in production. We have three types of returns to scale.

1. Constant returns to scale
2. Increasing returns to scale
3. Decreasing returns to scale

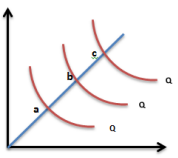
1. **Constant returns to scale:** If output increase in the same proportion as the increase in inputs returns to scale are said to be constant. The doubling of all factors inputs causes doubling of the level of output, the case of constant returns to scale is sometimes called linear homogeneous production function.



2. **Increasing returns to scale:** When the output increases at a greater proportion then the increase in inputs. Returns to scale are said to be increasing. When the returns to scale are increasing the distance between successive isoquants becomes less and less i. e oa > ab> bc.



3. **Decreasing returns to scale:** When the output increases in a smaller proportion than the increase in all inputs, returns to scale are said to be decreasing. It can be seen that distance between successive isoquants are increasing. It signifies that equal increments in output are obtained by larger and larger increase in inputs.



Cobb-Douglas Production Function:

Cobb-Douglas put forth a production function relating to output. American manufacturing industries from 1899-1922 to Labour and Capital inputs. It is widely used to represent the relationship of output and inputs. In its most standards form for production of a single good with two factors, the function is

$$\mathbf{Y= b.\ L^{\alpha}.\ K^{\beta}\quad (Or)\ Y= b.\ L^{K}\ C^{1-K}}$$

Where,

Y is total productivity

L is labour input and K is capital input

b is total factor productivity

α and β are the output elasticity's of labour and capital respectively.

These values of constants determined by available technology. Output elasticity measures the responsiveness of output to a change in levels of either labour or capital used in production.

If $\alpha+\beta=1$ the production has constant returns to scale

If $\alpha+\beta<1$ the production has returns to scale are decreasing

If $\alpha+\beta>1$ the production has returns to scale are Increasing

Cobb-Douglas were influenced by statistical evidence that appeared to show that labour and capital share of that output were constant overtime in developed countries. They explained this by statistical filling least squares regression of their production function.

Cost Analysis

Cost refers to the expenditure incurred to produce a particular product or service. All costs involve a sacrifice of some kind or other to acquire some benefit. Cost plays a vital role in determining the profits of a firm. Cost may include price to be paid for a good, its transportation, storage and handling expenses besides other miscellaneous outflows.

Cost Concepts and Classification/ Types of Costs:

The kind of cost concept to be used in a particular situation depends upon the business decisions to be made. The following are the possible variations in the concept of cost.

Actual Cost and Opportunity Cost: Actual cost means the actual expenditure incurred for acquiring or producing a good or service. These costs are generally recorded in the books of account. These costs are also known as **outlay costs or absolute costs**.

Opportunity cost of a good or service is measured in terms of revenue which could have been earned by employing that good or service in some other alternative uses. If there are no alternative there are no opportunity costs. The benefits from the present option should be more than the benefits of all other alternatives.

Fixed Cost Versus Variable Costs:

Fixed costs are those costs fixed in the short run. Whether production is taken up or not, we have to incur certain expenses such as rent for factory and office buildings, insurance, telephone, electricity and so on.

Variable costs are those costs that vary with the volume of production. Variable costs comprise the costs of raw materials, wages and so on. These costs are incurred only when there is production. In other words, costs of fixed assets are fixed costs and those of current assets are variable costs.

Semi-fixed or Semi-Variable Costs:

These costs refer to such costs that are fixed to some extent beyond which they are variable. Telephone charges or electricity charges are good example for this.

If we have connection, we have to pay the minimum charges. This is fixed charges. The more you use the facility the more you have to pay.

Explicit Costs versus Implicit Costs:

Explicit costs involve payment of cash. The rent for the land, wage for the Labourers, interest paid on the borrowed funds, taxes and other expenditure are the explicit costs.

Implicit costs do not involve payment of cash as they are not actually incurred. The implicit costs are: interest on own capital, salary to own supervision, rent of own premises and so on.

Out of Pocket Costs versus Imputed Costs:

Out of pocket costs are those costs involving an immediate outflow of cash. These are spent in day-to-day life of the business. Out-of-pocket costs are called explicit costs because they are incurred in reality.

Sometimes, imputed costs are called book costs. Book costs are those, such as depreciation which do not require current cash expenditure. Imputed costs can be converted into out-of-pocket costs by selling the assets and earning them back from the buyer.

Total Costs, Average Costs and Marginal Costs:

The sum total of all the costs, fixed, variable for the entire output is known as total cost. Average cost is the cost per unit of output and is computed by dividing the total cost by the

number of units produced. Marginal cost is the change in total cost due to the production of one additional unit of output.

Replacement Costs versus Historical Costs:

Replacement costs are those costs that are to be paid currently if the asset were to be replaced. Historical costs are those costs that have been originally spent to acquire the assets.

Separable Costs versus Joint Costs:

The costs can be identified directly with a particular product or unit, department are called as separable costs or direct costs. There are certain costs such rent, electricity, R & D etc. cannot be separable these are joint or indirect costs.

Cost Output Relationship:

The costs and output are related. The cost of production depends on several factors such as volume of production, relationships between the costs and output. The cost–output relationship significantly differ in short-run, the costs can be classified into fixed costs and variable costs. Where in the long-run the cost–output relationship studies the effect of varying the size of plants upon its cost.

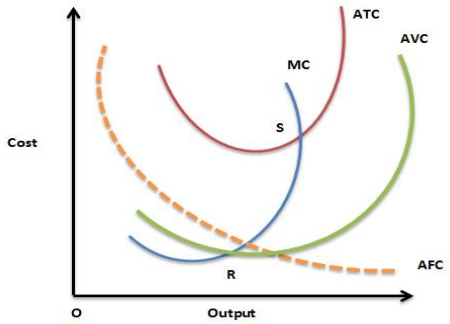
Cost output relationship facilitates many managerial decisions such as

- Formulating a rational policy.
- Expense control
- Profit prediction
- Pricing
- Promotion

Costs in Short Run: Costs in short run are classified into fixed and variable costs. The fixed costs may be ascertained in terms of total fixed cost and average fixed cost per unit. The variable cost can be determined in terms of average variable cost and total cost.

The following table explains the behaviour of costs in short-run.

Monthly output (Units) A	Total fixed cost (Rs.) b	Total Variable Cost c	Total cost d=b + c	Average fixed cost e=b/a	Average Variable Cost f=c/a	Average Total Cost g=d/a	Marginal cost h
0	100	0	100	-	-	-	-
1	100	30	130	100	30	130	30
2	100	54	154	50	27	77	24
3	100	72	172	33.3	24	57.3	18
4	100	96	196	25	24	49	24
5	100	150	250	20	30	50	54
6	100	216	316	16.6	36	52.6	66
7	100	320	420	14.2	45.7	69.6	104



It can be noticed that AFC will continue to decrease. Hence AFC slope downwards and it appears to meet X-axis but it will never meet the X-axis for obvious reasons.

The average cost curve AVC curve tends to fall in beginning, when the output is increasing but after particular level of output it rises because the application of law of returns.

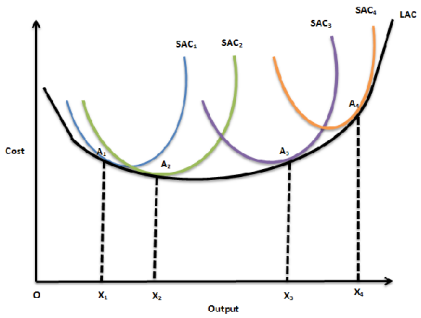
Average total cost is to be noted that it will be nearer the AFC curve. In the initial stages because the higher AFC at the initial levels of output has greater influence on ATC. As output increases and AFC decreases, the influence of AFC on ATC also will decline.

It is to be noted that the ATC curve will never touch the AVC curve or the AFC curve for obvious reasons.

Costs in Long-Run:

Long run refers to that period of time over which all factors are variable. All costs are variable. Hence the long run costs refer to the costs of providing different levels of output by changing the scale of production.

A long-run is also expressed as a series of short runs. This further explained that the long run is associated with series of short run average cost curves. The long run average cost curve (LAC) is flat U- shaped curve enveloping a series of short run average cost curves (SACs). LAC is tangential to all the SACs.



The point of tangency represents minimum average cost in the long run and not in the short run. The long run and short run average costs are equal to each other only at particular points of tangency.

The LAC curve is a planning curve as the long run demand of the product is to be taken into consideration before deciding upon the right size of the plant.

The U shape implies that the cost of production continue to be low till the firm reaches the optimum scale (MC=AC). Beyond this level the cost of production increases.

Suppose the firm is producing output OX_1 units of a plant of SAC_1. If it wants to produce OX_2 units of output by acquiring a bigger size plant SAC_2 and operating on it. If it wants to produce OX_3 units of output, it can operate on the bigger size plant SAC_3 at least cost X_3A_3.

It is to be noted that there is only one short run average cost curve SAC_3 which is tangential to the long run average cost curve at minimum point. Long run average cost curve is of greater utility of the entrepreneur to make decisions relating to expansion of the size of the firm.

Break Even Analysis (BEA):

Break Even Analysis refers to analysis of the Break Even Point (BEP). It is also called as the Cost-Volume-Profit (CVP) analysis. The BEP is as a no profit or no-loss point. A firm is said to attain the BEP, when its total revenue is equal to total cost (TR=TC). Total cost comprises fixed cost and variable cost.

Definition:

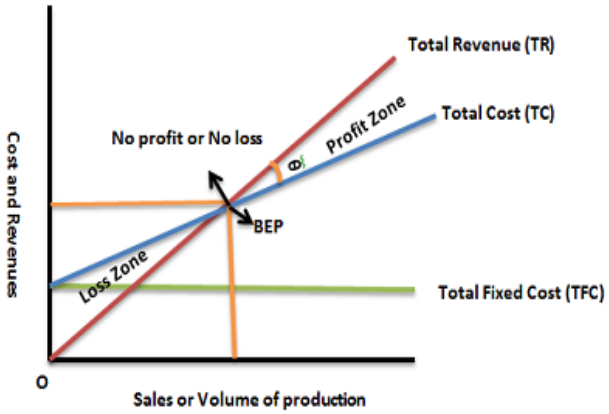
Break even analysis is defined as analysis of costs and their possible impact on revenues and volume of the firm.

Approaches of BEP:

There are two approaches in BEP

1. Graphical approach
2. Formulae approach

Graphical representation of Break-Even –Point:



1. Cost and revenues on vertical axis or Y- axis.
2. Sales or volume of production on horizontal axis or X-axis.
3. One line parallel to the horizontal axis that is total fixed cost (TFC) line.
4. A line draws from origin, it is total revenue line.
5. A line starts from a total fixed cost line that is total cost line.
6. When total revenue line is equal to total cost line (TR=TC) that point is "Break Even Point"
7. At Break Even Point the firm has no loss or no profit.
8. Above Break Even Point is profit zone.
9. Below Break Even Point is loss zone.
10. The angle formed where the total cost curve cuts total revenue curve (TC=TR) that the incidence is "angle of incidence".
11. The difference between actual sales and break even sales is margin of safety.

Assumptions:

1. All costs are classified into two, fixed and variable.
2. Fixed costs remain constant at all levels of output.
3. Variable costs vary proportionally with the volume of output.
4. Selling price per unit remains constant in spite of competition or change in the volume of production.
5. Volume of production is the only factor affecting the cost.
6. Volume of sales and volume of production are equal. Hence there is no unsold stock.

Significance of BEA

- To ascertain the profit on a particular level of sales volume.

- To compare the efficiency of the different firms
- To decide whether to add a particular product to the existing product line or drop one from it
- To decide what promotion mix will yield optimum sales
- To assess the impact of changes in fixed cost, variable cost or selling price on BEP and profits during a given period.

Limitations of BEA

- Break – even - point is based on fixed cost, variable cost and total revenue. A change in one variable is going to affect the BEP
- All cost cannot be classified into fixed and variable costs. We have semi-variable costs also.
- In case of multi-product firm, a single chart cannot be of any use.
- It is based on fixed cost concept and hence holds good only in the short run.
- Total cost and total revenue lines are not always straight as shown in the figure.
- Where the business conditions are volatile, BEP cannot give stable results

Merits:

1. Information provided by the Break Even Chart can be understood more easily than those contained in the profit and Loss Account and the cost statement.
2. Break Even Chart discloses the relationship between cost, volume and profit. It reveals how changes in profit. So, it helps management in decision-making.
3. The chart discloses profits at various levels of production.
4. It serves as a useful tool for cost control.
5. Analytical Break-even chart present the different elements.

Demerits:

1. Break-even chart presents only cost, volume and profits. It ignores other considerations such as capital amount, marketing aspects and effect of government policy etc.,
2. It is assumed that sales, total cost and fixed cost can be represented as straight lines. In actual practice, this may not be so.
3. A major drawback of BEC is its inability to handle production and sale

of multiple products.

4. It is difficult to handle selling costs such as advertisement and sale promotion in BEC.
5. It ignores economies of scale in production.
6. Fixed costs do not remain constant in the long run. Semi-variable costs are completely ignored.
7. It assumes production is equal to sale. It is not always true because generally there may be opening stock.

The Formulae Approach:

Contribution: Contribution is the difference between sales and variable costs and it contributed towards fixed costs and profit.

Contribution = Sales – Variable

C=S-V

Cost Contribution = Fixed Cost + Profit.

C=F+P

Margin of safety*:* Margin of safety is the excess of sales over the break even sales. It can be expressed in absolute sales amount or in percentage.

Angle of incidence*:* This is the angle between sales line and total cost line at the Break-even point. It indicates the profit earning capacity of the concern. Large angle of incidence indicates a high rate of profit; a small angle indicates a low rate of earnings.

Profit Volume Ratio: It is one of the most useful ratios for studying the profitability of business. The ratio of contribution to sales is the PV ratio. It may be expressed in percentage.

$$PV\ Ratio(\ Profit\ volume\ Ratio) = \frac{C}{S}\ or\ \frac{s-v}{s}$$

The Break-Even-Point can be computed in terms of quantity (Units) references symbolically $\mathbf{Q_B}$ or in terms of money value or sales volume referred as symbolically $\mathbf{R_B}$. As a percentage of estimated capacity referred as percentage BEP.

a) **Break-Even-Point in Units (Q_B)**: The ratio of fixed cost and contribution.

$$Q_B = \frac{Fixerd\ cost}{Contribution} = \frac{F}{C} \text{ or } \frac{F}{S-V}$$

Where,

F= Fixed Cost

C= Contribution per Unit

S= Selling price per Unit

V=Variable Cost per Unit

b) **Break-Even-Point in Rupees (R_B)**: The ratio of fixed cost and PV ratio.

$$R_B = \frac{Fixerd\ cost}{Contribution\ Ratio} = \frac{F}{PV\ Ratio}$$

$$PV\ Ratio(\ Profit\ volume\ Ratio) = \frac{C}{S}\ or\ \frac{s-v}{s}$$

c) **Marginal Cost Equation**:

S-V=F+P or C = F+P

Sales X PV ratio= F+P

S X C/S=F+P

d) **Total Sales Value**: Sales price= Fixed Cost + Profit + Variable Cost

S=F+P+V

e) **Profit= Sales -Total Cost**

(Or)

Profit= Contribution – Fixed Cost

F+P=C or P=C-F

f) **Profit Volume Ratio**:

$$PV\ Ratio(\ Profit\ volume\ Ratio) = \frac{C}{S}\ or\ \frac{s-v}{s}$$

PV Ratio= 1-Variable Cost Ratio Or Variable Cost Ratio=1- PV Ratio

Problems on Break –Even-Point

❖ **From the following data calculate BEP.** Selling price per unit is Rs. 50/-, Variable cost per unit is Rs.30/- and Fixed Cost is Rs.200,000/-.

Solution:

Given data S=50

V=30

F=2,00,000

BEP (Q_B) = $\frac{F}{C}$

Contribution= Sales – Variable cost

C= 50-30=20

$= \frac{200000}{20}$ **= 10,000 units**

BEP (R_B) = $\frac{F}{PV\ Ratio}$

PV Ratio= $\frac{C}{S}$

$= \frac{20}{50}$ X100 = 0.4 X 100 = 40 %

BEP (R_B) = 200000/2/5 $= \frac{200000}{2}$ X 5 **=Rs.5, 00,000/-**

❖ **From the following information find out the amount of profit earned during the year**

Fixed cost = Rs.500,000 /-
Variable cost per unit = Rs.10/-
Selling price per unit = Rs.15/-
Output level = 1,50,000 units

Solution: Marginal Cost Equation: S-V=F+P

P=S-V-F

P= C-F

Total Sales = Selling price per unit X Output level

= 15 X 1,50,000 =22,50,000/-

Total Variable Cost =Variable cost per unit X output level

= 10 X 1,50,000 = 15,00,000/-

Contribution = S-V

= 22,50,000- 15,00,000 = 7,50,000/-

Profit = C – F

= 7,50,000- 5,00,000 = **2,50,000/-**

Profit is rupees 2,50,000/-

❖ Calculate BEP with the help of following details: Sales is Rs.500,000, Fixed cost is Rs.100,000 and Profit is Rs.150,000

Solution:

Marginal cost equation: S-V=F+P

5, 00,000-V=1, 00,000+1, 50,000

5, 00,000-V=2, 50,000

V=2, 50,000/-

Variable cost = 2, 50,000/-

BEP in rupees= $\frac{F}{PV\ Ratio}$

$$PV\ Ratio(Profit\ volume\ Ratio) = \frac{C}{S}\ or\ \frac{s-v}{s}$$

PV Ratio=500000-250000/500000=250000/500000

= ½ X 100 = 50%

BEP in rupees= $\frac{F}{PV\ Ratio} = \frac{100000}{\frac{1}{2}}$ = 200,000/-

❖ The sales and profit during two periods as under

	Period-I	Period-II
Sales	20,00,000/-	30,00,000/-
Profit	2,00,000/-	4,00,000/-

Calculate PV ratio, Fixed expenses, BEP, Profit required to sale of 50,00,000/-

Solution:

i) **PV ratio=** $PV\ Ratio(Profit\ volume\ Ratio) = \frac{C}{S}\ or\ \frac{s-v}{s}\ or\ \frac{\Delta P}{\Delta S}$

Δ P= Profit of P-II - Profit of P-I

=400000-200000 =2,00,000/-

Δ S= Sales of P-II – Sales of P-I

=30,00,000-20,00,000 =10,00,000

PV Ratio= 200000/1000000

=1/5= 20%

ii) Marginal Cost Equation: S-V=F+P

Fixed Cost= Sales X PV ratio - P

P-I F= Sales X PV Ratio- P

= 20,00,000 X 1/5 -200,000 = 400000-200000 **=2,00,000/-**

Period –I Fixed cost is Rs.2,00,000/-

P-2 F= Sales X PV Ratio- P

=30,00,000 X 1/5- 400,000 =600000-400000 **=2,00,000/-**

iii) BEP = $200{,}000/\frac{1}{5}$

=Rs.10,00,000/-

iv) **S X PV Ratio = P+F**

Sales is Rs.50,00,000/-

5000000X 1/5= P+ 200000

1000000= P+200000

P= 1000000-200000 **=800000**

❖ A firm has a fixed cost of Rs. 10,000/- selling price per unit is Rs.5/- and variable cost per unit is Rs.3/-. A) Determine BEP in units and sale value

B) Calculate the margin of safety considering that the actual production is 8000 units.

MOS= Actual production – BEP in Units

= 8000-5000 **= 3000 Units**

❖ From the following data calculate the PV Ratio, BEP in units and rupees. Selling price per unit is Rs.5/-, variable cost per unitRs.3/- and fixed cost is Rs. 12000/-

❖ The following sales and profit for two periods are available in respect of a concern

	Period-I	Period-II
Sales	1,00,000/-	2,00,000/-
Profit	15,000/-	23,000/-

Find out PV Ratio, Fixed Cost, BEP, Profit at an estimated sales of Rs.1,25,000/- and sales required to earned a profit of Rs. 20,000/-

i) PV Ratio = $\frac{\Delta P}{\Delta S}$

Diff. of Profit = (Profit of P-II) - (Profit of P-I)

=23000-15000=8,000

Diff. of Sales = (P-II Sales) – (P-I Sales)

=200000-100000 =100000

PV Ratio= $\frac{\Delta P}{\Delta S}$

=8000/100000 =2/25 =8%

ii) Fixed cost for period -I

Sales X PV Ratio= F+P

100000 X 2/25= F +15000

8000=F+15000

F= 7000

Fixed cost for period –II

Sales X PV Ratio= F+P

200000X 2/25= F+23000

16000= F+23000

F= 7000

iii) BEP

= 7000/2/25 =7000X 25/2

=1,75000/2 =Rs.87,500/-

IV) Profit @ sales 1,25,000/-

Sales X PV Ratio= F+P

125000X 2/25=7000+P

10000=7000+P

P=3000/-

V) Sales @ profit 20,000/-

Sales X PV Ratio= F+P

Sales = F+P/PV Ratio

=7000+20000/2/25 = 27000X25/2

=6,75,000/2 = 3,37,500/-

Sales is 3,37,500/-

❖ Pepsi Company produces a single article. Following cost data is given about its product, Selling price per unit is Rs.40, Marginal cost per unit is Rs.24 and fixed cost per annum is Rs. 16000. Calculate: (a) P/V ratio (b) break even sales (c) sales to earn a profit of Rs. 2,000 (d) Profit at sales of Rs. 60,000.

Solution: S=40, V=-24 and F= 16000

P/V Ratio = Contribution/sales x 100

= (40-24)/40 x 100 = 16/40 x 100 **OR** **40%**

Break even sales =F/PV Ratio

=16000/40% **= Rs.40,000/-**

The sales to earn a profit of Rs. 2,000

S X P/V Ratio = F + P

S= F+P/PV Ratio =16000+2000/40% = 18,000 x 100/40

S = Rs. 45,000/-

Profit at sales of 60,000

S X P/V Ratio = F + P

Putting this values: Rs. 60,000 x 40/100 = 16000 + P

24,000 = 16,000 + P

P = 24,000 – 16,000

P = Rs.8,000/-

UNIT-III

MARKET STRUCTURES

Markets:

Markets constitute an important phase in the economic activity. All the goods and services that are produced need to be sold to the consumer for a price. Markets facilitate this process. Markets primarily provide possession utility for the goods and services. In other words, the seller sells the goods to the buyer and thus transfers the ownership of goods.

Definition: Market is place where goods are bought and sold usually outdoors.

Market is defined as a place or point at which buyers and sellers negotiate their exchange of well-defined products or services.

The market refers to the total amount of a product that is sold each year, especially when you are talking about the competition between the companies who sell that product.

Market Structures:

Market Structure refers to the characteristics of a market that influence the behaviour and performance of firms that sell in that market. The following are market structure characteristics:

The degree of seller's concentration: This refers to the number of sellers and their market share for a given product or service in the market.

The degree of buyer's concentration: This refers to the number of buyers and their extent of purchases of a given product in the market.

The degree of product differentiation: This refers to the extent by which the product of each trader is differentiated from that of other.

The conditions of entry into the market: More often, there could be certain restrictions to enter into or exit from the market.

Types of competition or Types of markets/classifications of markets:

Based on degree of competition the markets can be classified into perfect markets and imperfect markets.

Perfect competition/ Perfect Markets:

A market structure in which all firms in an industry are price takers and in which there is freedom of entry into and exit from the industry is called perfect competition. The market with perfect competition conditions is known as perfect market. Perfect competition is an ideal market structure rather than an actual in reality.

Features:

The following are the features of perfect competition.

Large number of buyers and sellers: The number should be so large that it should not make any difference in terms of price or quantity supplied even if one enters the market or one leaves the market.

Homogeneous Products or Services: The product or services of each seller should be homogeneous. They cannot be differentiated from that of one another. The buyer does not have any particular preferences to buy the goods from a particular trader or supplier. There are no discounts.

Free entry and exit of firms: There are no artificial restrictions on new firms entry into and exit from the industry. It means that firms have complete freedom to enter into or leave the industry.

Perfect mobility of factors of production: There is perfect mobility of factors of production. It means that there are no artificial restrictions imposed on the movement of factors of production from one firm to another throughout the economy.

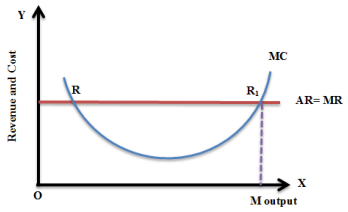
Perfect knowledge about the market conditions: All buyers and sellers possess perfect knowledge about the exiting market condition. Market conditions mean the prevailing market price, the nature of the products sold, the quantity of products demanded and supplied in the market etc.

Conditions of equilibrium under perfect competition:

Equilibrium point refers to a position where the firms enjoy maximum profits and it has no incentive to reduce or increase its output level.

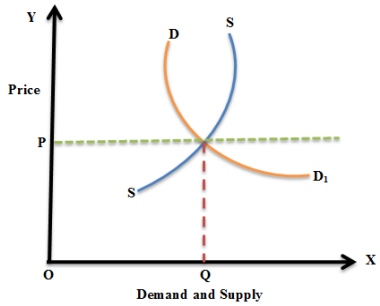
i) Marginal revenue (MR) must be equal to its marginal cost (MC).

ii) Marginal cost curve must cut the marginal revenue curve from below at the equilibrium output.



Hence the equilibrium will be stabilized only at the point where MR=MC and MC curve must cut MR curve from below at the equilibrium output OM.

Price determination under perfect competition: The individual firm under the conditions of perfect competition has no control over the price. Price is determined by the market forces, i.e demand and supply for a given product or service.

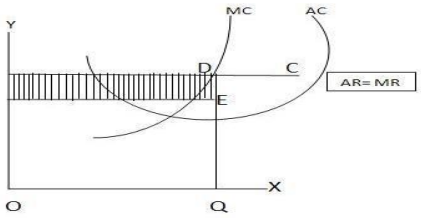


The industry demand curve normally slopes downwards (DD_1 curve). The supply curve normally slopes upwards (SS curve). Where DD curve cuts SS curve, It is the price that determines the quantity demanded and supplied.

Price output determination:

Short run:

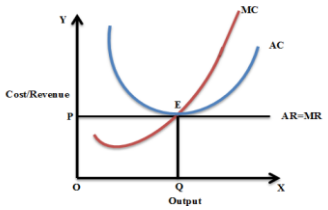
The price and output of the firm are determined under perfect competition based on the industry price and its own costs. The process of price output determination in case of perfect competition is illustrated with diagram.



Long run:

Having been attracted by abnormal profits more and more firms enter the industry. The entry of more and more firms will expand the supply pulling down the market price. In the long run the firm will a position to enjoy only normal profit but not abnormal profits. All those firms that are not able to earn at least normal profits will leave the industry. Two conditions are to be fulfilled in the long run

a) MR=MC b) AR=AC

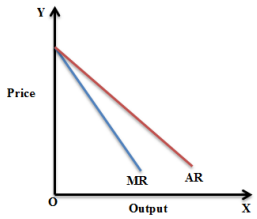


Imperfect Market/ Imperfect Competition: A competition is said to be imperfect when it is not perfect. Based on the number of buyers and sellers, the imperfect markets are classified into following.

1. Mono ploy
2. Monopolistic
3. Oligopoly
4. Duopoly

Monopoly:

Mono means single and poly means seller. Monopoly is a market situation in which there is only one seller or firm. Who controls market supply of a product which has no close substitute products. Since there is only one firm under monopoly, that single firm constricts the whole industry. Therefore the distinction between the firm and industry disappear the whole industry.



Features: The following are the features of monopoly.

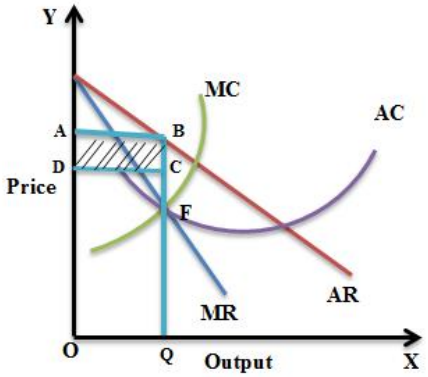
- There is single producer or seller of a product.
- There is a complete absence of competition.
- There is no close substitute for the product.
- There is prevention of entry of new firms in the long run.
- There is no distinction between firm and industry.

Causes of monopoly: There can be several factors that lead to monopoly

- Government policies and legal provisions.
- Mergers and acquisitions.
- Through research and development.
- Control over key inputs.

Price output determination in monopoly: Under monopoly the average revenue curve for a firm is a downward sloping one. It is because if the monopolist reduces the price of his product the quantity demanded increases and vice-versa.

In monopoly, marginal revenue is less than the average revenue. In other words, the marginal revenue curve lies below the average revenue curve.



The monopolist always wants to maximise his profits. To achieve maximum profits, it is necessary that the marginal revenue should be more than the marginal cost.

He can continue to sell as long as the marginal revenue exceeds marginal cost. At the point F, Where MR=MC, profits will be maximised. Profits will diminish if the production is continued beyond this point.

It can be seen that the demand curve or average curve is represented by AR, Marginal revenue curve by MC. OQ is equilibrium output, OA is the equilibrium price, QC is the average cost and BC is the average profit (AR=AC).

Up to OQ output, MR is greater than MC and beyond OQ, MR is less than MC. Therefore, the monopolist will be in equilibrium at output OQ. Where MR=MC and profits are maximum. OA is the corresponding price to the output level of OQ. The rectangle ABCD represents the profits earned by the monopolist in the equilibrium position in the short-run.

Price Discrimination:

Price discrimination exists when the same product is sold at different prices to different buyers. The product is basically the same, but it may have slight differences.

Eg: Different binding of the same book.

Definition: The act of selling the same article produced under single control at a different price to the different buyers. Price discrimination refers strictly to the practice by a seller of charging of different prices from different buyers for the same good.

Degrees of price discrimination: According to Prof. A.C. Pigou, there are three degrees of price discrimination.

First degree: In which the monopolist exploits the buyer to the maximum possible extent by charging the maximum that each buyer is able to pay. This is also known as perfect price discrimination.

Second degree: In which the buyers are divided into groups and from each group, a different price is charged, which is the lowest demand price for that group.

Third degree: In which the monopolist splits the entire market into a few submarkets and charges a different price in each submarket.

Types of price discrimination: There are three types of price discrimination.

Personal discrimination: It is personal when different prices are charged from different buyers on the basis of their ability to pay.

Place discrimination: Place discrimination is local when the price varies according to locality.

Usage discrimination: Price discrimination is according to use when different prices are charged for different types of uses of the same commodity.

Monopolistic Competition:

It is a real market situation which lies in between two extreme market situations, namely perfect competition and monopoly.

Meaning: Monopolistic competition is a market situation in which there are many buyers and sellers of a differentiated product engaged in buying and selling close but not perfect substitute products.

Monopolistic competition is perhaps the most common of the market situations which we find in the real world.

Eg: Tooth Paste

Features: The following are the feature of monopolistic competition.

1. There are many buyers and sellers.
2. The products being sold are differentiated or heterogeneous in character.
3. There is free entry or exit of firms.
4. The goal of the firm is profit maximization both in the short-run and in the long-run.
5. The prices of factors of production and technology are given.

6. Product differentiation: It is one of the most important features of monopolistic competition. Since each seller is interested to sell more of his product, he has to distinguish his products from the others.

There are two bases of product differentiation:

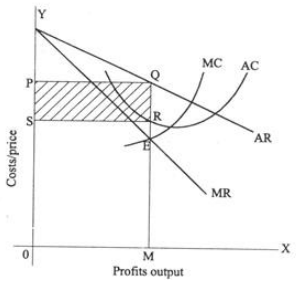
- Differentiation is based upon the certain characteristics of the product itself such as exclusive patented features, traders, trade market and trade names, quality, design and colour.
- Differentiation is based upon the conciliation surroundings the sale of the product. These conditions include the convenience of the seller's location, courtesy and efficiency.

7. Selling cost: Selling cost refers to those expenses which have to be incurred in selling the product.

Eg: Advertisements, door-to-door canvasing, etc.

Price output determination under monopolistic competition: It means that the firm under monopolistic competition also will reach equilibrium, when its marginal cost equals its marginal revenue (MC=MR).

Short run: In short run firms may experience super normal or normal profits or even losses. In other words, if the firm satisfies the following two conditions, it may make super normal profits.

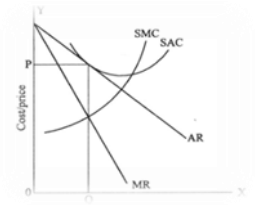


a) Where marginal cost is equal to marginal revenue (MC=MR)

b) Where average Cost is less than average Revenue (AR<AC)

The firm may be in losses when the cost rise or demand.

Long run: More and more firms will be entering the market having been attracted by super normal profits enjoyed by the existing firms in the industry. On the other hand, on the entry of several firms supply in the market will increase, pulling down the selling price of the products.



In the long run in order to achieve equilibrium position the firm has to fulfil the following two conditions:

a) MR=MC b) AR= AC

Oligopoly Competition:

Oligopoly is a market situation in which there are a few sellers engaged in selling either homogeneous or differentiated products.

The products which are sold in the oligopolistic market are close but not perfect substitute products.

Types: Oligopoly is of two forms as mentioned below

Pure oligopoly: Pure oligopoly is a market situation in which the firms are producing identical of homogeneous products.

Eg: Petrol industry.

Differentiated oligopoly: Differentiated oligopoly is a market situation in which each firm is producing a differentiated product.

Eg: Automobile industry.

Features: The following are the features of oligopoly

- There are a few sellers selling either homogeneous or differentiated products.
- There is high degree of interdependence on the part of the firms.
- There is a high degree of cross elasticities of demand for their products.
- There is price rigidity.

Duopoly:

Duopoly refers to a market situation in which there are only two sellers. As there are only two sellers any decision taken by one seller will have reaction from the other.

Eg: Coca-Cola and Pepsi.

Usually these two sellers may agree to co-operate each other and share the market equally between them, So that they can avoid harmful competition.

The duopoly price, in the long run, may be a monopoly price or competitive price, or it may settle at any level between the monopoly price and competitive price. In the short period, duopoly price may even fall below the level of competitive price with the both the firms earning less than even the normal profits.

Pricing Methods:

Pricing policies are the decisions by a company determining prices to be charged for its products. There are a number of different pricing policies or strategies which a firm may adopt in order to achieve its pricing objectives.

1. Marginal Cost Pricing: Social welfare is maximum or, in other words, economic efficiency in resource allocation is achieved when price is set equal to marginal cost. It has been suggested that non-profit enterprises should pursue marginal cost pricing policy so as to achieve economic efficiency in resource allocation.

2. Limit Pricing: Limit pricing implies that firms sacrifice current profits in order to deter entry of new firms and earn future profits.

3. Market Skimming Pricing: Skimming is adopted where a new product is launched and the seller has little information on the acceptable price in the market. The seller, therefore, starts by setting a high price on the launch of the product and then, over a period of time, lowers the price to meet the varying price elasticities of demand.

4. Penetration Pricing: Penetration pricing is a strategy employed by businesses introducing new goods or services into the marketplace. With this policy, the initial price of the good or service is set relatively low in hopes of 'penetrating' into the marketplace quickly and securing significant market share. A penetration policy is even more attractive if selling larger quantities results in lower costs because of economies of scale.

5. Bundling Pricing: It is a pricing practice when two or more products are sold as bundle. Also, the constituent products of the bundle are not sold individually. Price bundling is a strategy whereby a seller bundles together many different goods/items being sold and offers the entire bundle at a single price.

6. Peak Load Pricing: It is a pricing practice where price varies with time of the day. When demand for a commodity or service varies at different periods of time, it has been generally suggested that higher price of a commodity or service be charged for the peak period when demand is greater and lower price be charged for off-peak period when demand is lower.

Business:

Business is an activity aimed at earning profits. Business involves scarce resources and satisfaction of human needs using such resources. Thus business is an economic activity.

Business unit is a concern, company or enterprise which buys and sells, is owned by one person or group of persons and is managed under a specific set of operating policies.

Characteristics of Business:

Dealing in goods and services: Business activity deals with goods and services, goods may be **a) Consumer goods:** Goods which are ready for direct consumption.

b) Capital goods: Goods which assists in the production of consumer goods.

Risk and Uncertainty: Risk refers to uncertainty of return. Risk that can be insured like risk against loss by theft, risk arising out of business operations.

Continuity: Goods and services should be continuously traded.

Profit motive: The objective of starting a business is to earn profit through he or she may suffer losses.

Satisfaction of human needs: The main aim of any business activity is to satisfy human needs. A profitable business unit is one which understands the needs of the customer and tries to satisfy them.

Transfer of title: Business activity is aimed at transfer of ownership of goods and services for value. The seller should transfer ownership of goods and services to the buyer.

Forms of Business Organisations/ Types of Business Organisations:

Based on ownership the business organisations are divided into the following types.

1. Sole trader
2. Partnership form
3. Joint stock company
4. Cooperative societies

Sole trader:

The sole trader is the simplest, oldest and natural form of business organisation. It is also called as **"Sole Proprietorship".**

Sole means one; sole trader implies that there is only one trader, who is the owner of the business.

Feature/ Characteristics:

- He introduces his own capital sometimes he may borrow, if necessary.
- It is easy to start a business.
- He enjoys all the profits and in case of loss he alone suffers.
- He has a high degree of flexibility to shift from one business to another.
- Business secrets can be safeguarded well.
- There is no continuity for the business.
- He can be directly in touch with the customers.

Advantages:

Easy formation: It is very easy and simple to form sole proprietorship.

Full Control: The entire business will be under his control.

Quick decisions: The proprietor takes quick decisions regarding the business. He has the decisions making authority.

Full Secrecy: The sole trader maintains the business secrets well.

Flexible to change: The sole trader brings in the business easily. He can change size of the business.

Profit or Loss: The sole trader enjoys all profits or loss due to the running of the business.

Dis advantages:

Limited amount of capital: The resources of a sole trade can be very large and he is not able to extend operations.

No division of work: All the work related to different functions such as marketing, finance, production and so on has taken care of by the sole trader himself.

Inadequate growth and expansion: The scope for expansion and growth is very limited because limited resources and manpower.

Low bargaining power: He may have to compromise many times regarding the terms and conditions of purchase of materials or loans from financial institutions and banks.

Partnership Form: Partnership form of organisation is two or more persons are associated and start business. Partnership form of organisation is an improvement version of sole proprietorship in many aspects in sole trade business suffered from many drawbacks such as limited resources, lack of specialisation, uncertainty and so on. Many of these drawbacks are not a part of partnership form of organisation.

Definition: According to Indian Partnership Act 1932, "Partnership is relation between persons who have agreed to share the profits of business carried on by all or any one of them acting for all".

Characteristics/features of Partnership:

Association of two or more persons: In order to form a partnership form of organisation, there must be two or more persons and these persons should be competent enough to enter into a partnership agreement.

Good faith: In partnership form there are two or more owners. It is very essential for them to trust each other.

Restriction on transfer of share: Without the consent of other partners, no partner can transfer his share in business to any outsider.

Number of partners: According to the Indian Partnership Act. The minimum number of partners should be two and the maximum number in **10** in case of banking business and **20** in case of non-banking business.

Profit motive: The under laying objective of partnership is to earn profits by engaging themselves into a legal business activity.

Principal and agent relationship: In partnership form of organisation every partner acts an agent and also principal. Thus one partner or partners act on behalf of others.

Advantages of Partnership:

Easy to form: A partnership form can be started with an agreement between the partners. No legal formalities are required.

Availability of large resources: The resources of partnership are contributed by the more than one person. Therefore the resources available are large, when compared to sole trade business.

Better decision making: The decisions taken by a partnership firm can be much better because the opinion of all the partners into account.

Sharing of risk: The burden of loss, if any is borne by all the partners, which makes partnership less risky.

Flexibility: The operation of partnership firm is flexible because there is no need for any prior permission from the government before making any change in the business activity, capital etc.

Disadvantages:

Instability: A Partnership firm can be dissolved at the death, insolvency of a partner.

Mutual distrust: The differences between partners may become fatal for a partnership firm.

Lack of public confidence: The accounts of partnership firm are not audited annually and published. This may lead to distrust among the public on the organisation.

Limitations on transfer of share: There is no right to transfer share to any other party, without the consent of the other partners.

Partnership Deed:

Partnership deed or agreement is a document containing various aspects, which help in the smooth functioning of partnership and also easier settlement of disputes, arising at a future date.

Contents of a partnership deed:

- Name of the firm
- Name and addresses of partners
- Nature of business

- Profit sharing ratio among the partners.
- Division of powers and duties among partners.
- The method of valuation of goodwill.
- Procedure for dissolution of the firm.
- Rate of interest to be allowed on capital.
- Total number of capital and contributions by each partner.

Kinds of Partners:

Active partner: An active partner is one who takes active part in day to day working of the business.

Sleeping or dormant partner: A sleeping partner does not take part in working of the business. But he contributes capital, share profit and losses.

Nominal Partner: A nominal partner does not bring in capital into the business but only lends his name for name sake.

Secret partners: The membership of a secret partner is not disclosing the public. But a secret partner can take part.

Minor as a partner: A minor is a person who is below the age of 18 years. Minor can be admitted as a partner and can also be given a share in the profits of the business.

Joint Stock Company:

The joint stock company emerges from the limitations of partnership such as joint and several liability, unlimited liability and uncertain duration and so on. The main principle of the joint stock company form is to provide opportunity to take part in business with low investment as possible. It has been a boon for investors with moderate funds to invest.

The system of Joint Stock Company has been very useful for large undertakings which require huge capital. Here the capital is divided into certain units. Each unit is called a **share**. The price of each share is kept so low that even a common man can find it comfortable to pick it up.

The word company has a Latin origin ‘com’ means ‘come together’, “pany” means ‘bread’. Joint Stock Company means people come together to earn their livelihood by invest shares.

Features/characteristics of joint stock company:

A company is an artificial person created by law. It has its own name and seal. It can

perform all the activities of businessman like purchase and sale of goods etc.,

Separate legal existence: It has an independent existence. It is separate from its members. It can acquire the asset.

Voluntary Association: Voluntary association of persons who want to carry on business for profit to carry on business they need capital.

Capital is divided into shares: The total capital is divided into a certain number of units. Each unit is called a share. The price of each share is so low that every investor would like to invest in company.

Transferability of shares: In the company form of Organisation the shares can be transferred from one person to the other.

Common seal: Company being an artificial person created by law cannot sign. Therefore the people who manage the company should affix the company's seal as an alternative to its signature.

Perpetual succession: Shareholders may change, but the existence of the company will continue without any interruption.

The name of the company ends with limited: It is necessary that the name of the company ends with limited (Ltd) to give an indication to the outsiders that they are dealing with the company with limited liability.

Merits of Joint Stock Company:

Mobilization of larger resources: A joint stock company provides opportunity for the investors to invest even small sums in the capital of large companies. This facilitates rising of larger resources.

Separate legal entity: The Company has separate legal entity it is registered under India companies' act 1956.

Limited liability: The shareholder has limited liability in respect of the shares held by him.

Transfer of shares: The shares can be transferred to others however the private company shares cannot be transferred.

Liquidity of investments: By providing the transferability of shares. Shares can be converted into cash.

Economics of large scale production: Since the production is in the large scale with large funds at its disposal the company can enjoy the internal economics of large scale production.

Continued existence: The Company has perpetual succession. It has no natural end. It

continues forever and ever unless law.

Professional management: The board of directors recruits competent and professional managers to handle the affairs of the company in a professional manner.

Demerits:

Higher degree of government interference: The government brings out a number of rules and regulations governing the internal conduct of the operations of a company such as meetings, voting, audit and so on.

Lack of initiative: In most of the cases the employees of the company at different levels show slack in their personal initiative with the result.

Lack of responsibility and commitment: Where a manager does not show up willingness to take responsibility they cannot be considered as committed. They will not be able to handle the business risks.

Conflicting interests: The Company wants to maintain good amount of reserves. It is not possible to pay longer dividends and yet to maintain good amount of reserves.

Trend to monopoly: Where the company has grown to larger size, it may fix the price on its own for its products and services as a monopolist.

Higher taxes: The rate of income tax is very high when compared to the other forms of Organisation.

Kinds of Companies:

Companies can be classified as

1. According to incorporation:
    a) Chartered companies
    b) Statutory companies
    c) Registered companies
2. According to liability
    a) Companies limited by share
    b) Companies limited by guarantee
    c) Unlimited companies
3. On the basis of ownership
    a) Government companies
    b) Private companies
    c) Holding companies
    d) Public companies

Kinds of companies based on incorporation:

Chartered Company: Chartered companies are those which are incorporated under royal charter issued by king or head of state. According to this special rights and privileges are

granted to the company.

Eg: British East India Company formed in 1600 to trade with India.

Statutory Corporation: A statutory corporation is created by an act of the state legislature or parliament. The objectives, scope, powers and responsibilities are clearly defined in this act.

Eg: Bank of India, Food Corporation of India and APSRTC.

Registered Companies: These companies are formed under the companies' act; most companies in India are registered in India under the companies' act 1956.

According to liability:

Company limited by shares: In these companies capital is divided into small parts called shares. The shareholders purchase the shares and they are liable only for value of shares held by them.

Companies limited by guarantee: A company is said to be limited by guarantee where the liability of the members is limited to such an amount as they agreed upon to contribute to the assets of the company in the event of being wind up.

Unlimited Companies: An unlimited company is one where the personal property of every member can be used to clear the debts of the company. The liability is enforceable only at the time of winding up of the company.

On the basis of ownership:

Government Companies: Government companies means any company in which not less than 51% of the paid-up share capital is held by central government or any state government and partly one or more state government includes a company which is subsiding or Government Company.

Private companies: According to sec (3) of the Indian companies act 1956 a private company is one which

- Restricts the right to transfer its shares, if any
- Limits the number of its member to 50 excluding present and past employees.
- Prohibits any invitation or acceptance of deposits from persons other than its members.

Holding companies: A holding company is the one which contains the composition of board of directors of another company or holds more than half of the nominal value of the equity share capital in that company.

Public companies: In simple terms a public company is one which is not a private company.

which means all the restrictions imposed on a private company does not apply to these companies.

On the basis of nationality:

Indian companies: Any company incorporated in India under the companies' act of 1956 whether functioning in India or outside is called as an Indian company.

Foreign companies/MNC: A foreign company is one which is registered outside India but operates in India through its branches or agent.

Formation of Companies:

There are two stages in the formation of a joint stock company/company:

a) To obtain certificate of incorporation

b) To obtain certificate of commencement of business

The persons who conceive the idea of starting a company and who organize the necessary initial resources are called promoters. The vision of the promoters forms the backbone of joint stock companies/companies in the future to reckon with.

The promoters have to file the following documents along with the necessary fee, with the register of joint stock companies to obtain certificate of incorporation.

Memorandum of association: The memorandum of association is also called the charter of the company. It furnishes all its detail in six clauses such as

1. Name clause
2. Registered clause
3. Object clause
4. Capital clause
5. Liability clause
6. Subscription clause

Articles of association:

Articles of association furnish the bylaws or internal rules governing the internal conduct of the company. The main contents of articles of association are as follows:

a) Amount of share capital and different types of capital.

b) Methods to increase reduce or alter capital.

c) Different types of shares their respective rights.

d) Procedure in respect of transfer and transmission of shares.

e) Powers, rights, duties of directors in the board.

f) Remuneration of directors.

g) Procedure for winding up.

Prospectus: A prospectus is defined as a notice, circular, advertisement or any other

document inviting offers from the public for the subscription or adventures of the body corporate.

Contents of prospectus:

a) Name of the company and address of its registered office.

b) The nature and business of the company.

c) The main objectives of the company.

d) The list of promoters with their names, addresses and their past record.

e) The list of directors with their names, addresses and occupation.

f) The names of auditors, bankers and solicitors (Lawyers).

Cooperative Societies:

The philosophy of the cooperative movement was to improve their economic conditions through collective efforts. As a part of the cooperative movement, cooperative societies were organised for farmers, weavers, traders, consumers and such other.

The cooperative society's act 1904 provides a legal basis for the formation of cooperative credit societies in villages and in urban areas of granting loans to their respective members.

Features of cooperative societies:

1. It is a voluntary association
2. Separate legal entities
3. Compulsory registration
4. Membership is open
5. Self-finance
6. One member one vote
7. Service objective
8. non-transferability of shares
9. Restricted reward to capital
10. Equitable distribution of surplus.

Types of cooperative societies:

The various types of cooperative societies are given below:

1. Consumer cooperative societies
2. Producers cooperative societies
3. Cooperative farming
4. Cooperative Housing
5. Cooperative credit society

1. Consumer Cooperative Societies:

The objective of this society is to purchase consumable articles which are in common use directly from manufacturers in bulk and sells them to its members with low margin of profit.

2. Producers Cooperative Societies: This is the form of association in which persons combined together to form a society for the purpose of manufacturing goods.

EG: Rice mills, sugar mills, dairy products etc.

3. Cooperative Farming: Some of small agricultural people combined together to cultivate their lands in cooperative basis and get loans from the government to purchase agricultural implements.

Eg: Tractors, Fertilizers, Seeds etc.

4. Cooperative Housing: The low- and middle-income group who are unable to construct their own houses for want of money unite together and forms cooperative housing equities. They also procure site and building materials are cheaper rates the loans are given against the security of their houses.

5. Cooperative Credit Society:

It is an association of borrow ness, such societies are formed to provide financial help in the form of loans to members. The funds of these societies consist of share capital contributed by the members and deposits made by them and outsiders.

Public Enterprises:

Public enterprises occupy an important position in the Indian economy. Public enterprises are aimed at higher production, greater employment, economic equality and dispersal of economic power.

Departmental undertaking:

It is the earliest form of public enterprise under this form; the affairs of the public enterprise are carried out under the overall control of one of the departments of the government. The government department appoints a managing director (MD) for the department undertaking. It does not have a budget of its own.

Eg: Railways, Department of post, AIR, Doordarshan etc.

Features:

1. Under the control of a government department.
2. More financial freedom.
3. More a government organization less a business organization.
4. Like a government department.

Public Corporation:

Having realized that the routine government administration would be able to cope up

with the demand of its business enterprises, the government of India in 1948 decided to organize some of its enterprises as statutory corporations in pursuance of this, Indian finance corporation, Employees State Insurance Corporation were setup in 1948.

It is a right mix of public ownership, public accountability and business management for public ends. The public corporation provides a machinery which is flexible, while at the same time retaining public control. It has freedom in planning, management and control of its operations. It can formulate its own budget.

"A body corporate created by an act of parliament or legislature and noticed by the name in the official gazette of the central or state government. It is a corporate entity having perpetual succession and common seal with powers to acquire, hold, dispose of property.

Eg: LIC, FCI, Damodar Valley Corporation etc.

Features:

1. It has a separate legal existence.
2. More freedom in day-to-day operations.
3. Freedom regarding personal.
4. Perpetual succession.
5. Financial autonomy.
6. Run commercial principles.

Government Company:

Any company in which not less than 51% of the paid-up share capital is held by the central government or state government or partly state and partly central government is called as Government Company.

Features:

1. Directors are nominated.
2. Administrative autonomy and financial freedom.
3. subject to ministerial control.

Business Cycles (or) Trade Cycle:

It is natural for any business or economy to have ups and downs. The business cycles are associated with sweeping fluctuations in economic activity such as production prices, employment etc.

Definition of business/trade cycle:

In the words of WC Mitchell "Business cycle are a type of fluctuations in the economic activities of organised communities."

A trade cycle is composed of periods of good trade characterized by rising prices and low unemployment percentage, altering with periods of bad trade characterized by falling

prices and high unemployment percentages.

Phases of Business or Trade Cycles:

Business cycles are said to pass through five different stages. They are:

1. **Depression**
2. **Recovery**
3. **Prosperity**
4. **Boom**
5. **Recession**

Depression: It is a prolonged period when the overall business activity in a country is for less than the normal. It is first stage of the business cycle.

Recovery: A slight increase in economic activity after the lowest point of the depression is called recovery. The economic situation appears to be relatively better than in the earlier period of depression. Recovery is said to persist till the economic activity reaches more or less the level prevalent before the depression phase.

Prosperity: The stage of prosperity is identified by the following parameters:

1. Increase in production and full employment
2. Heavy capital investment in basic industries.
3. Expansion of bank credit and High prices and high profits

Boom: Drawing boom conditions, business activity expands rapidly to new peaks in terms of commodity prices, high profits and full employment.

Boom conditions may not continue for a long period. They may even portend recession. As the demand for the factors of production increases.

Recession: Recession is characterized by over pessimism in business circles, accompanied by fear and hesitation about the future trends in economy.

Recession in one sector may affect other sectors in the economy resulting in depression once again.

UNIT-IV

CAPITAL AND CAPITAL BUDGETING

CAPITAL MEANING:

Capital forms the base for the business. Capital in general does not mean only money. It may refer to money's worth also. Capital has different forms: creativity, innovation or new ideas can be considered as one form of capital. In this chapter we restrict our discussions to money to form of capital.

Capital can be defined as the wealth used in production i.e, it is a factor of production,

(or)

Capital is defined as wealth, which is created over a period of time through abstinence of speed.

NEED FOR CAPITAL:

Generally a business enterprise needs capital for varied purpose/ occasions; however some of which are given below.

Promotion of Business: Capital is required at the promotion stage. A large variety of expenses have to be incurred on project reports feasibility studies and reports, preparation and filing of various documents, and for meeting various other expenses in connection with the raising of capital from the public.

Conduct Business Operations Smoothly: Business firms also need capital for the purpose of conducting their business operations such as research and development advertising, sales promotion, distribution and operating expenses.

Expand and Diversity: The firm requires a lot of capital for expansion and diversification purposes. This includes development expenses such as purchase of sophisticated machinery and equipment and also payment towards sophisticated technology.

To Pay Taxes: The firm has to meet its stationary commitments such as income tax, sales tax, and excise duty and so on.

Liquidation: Even at the time of a firm it, it needs sufficient amount of cash in order to meet liquidation expenses.

Assets Replacement: After sometime, every asset which include machineries, need to be replaced as they become out dated on account of wear and tear or old technology. Hence

every firm must have sufficient provisions to replace the old outdated assets.

Support Welfare Programmes: The Company may also have to take up social welfare programmes such as literacy drive and health camps. It may have to donate to charitable trusts, educational institutions or public service organizations.

Wind Up: At the time of winding up, the company may need funds to meet the liquidation expenses.

TYPES OF CAPITALS:

Capital can broadly be divided into two types

1. Fixed capital
2. Working capital

Fixed Capital: It is associated with the amount of capital required by an enterprise for acquiring fixed assets. ex: Land, building, plant etc.

Working Capital: Working capital is that part of the capital which is required for the financing of current needs of the company. Working capital is usually invested in Raw Materials, Stock of Semi-Finished Goods, Salaries, Tools, Rent, Consumables, Advertisement and Accounts Receivables.

CAPITAL BUDGETING DECISIONS:

The above examples can be classified as under

Replacements: Replacement is to improve operating efficiency and reduce cost, cost saving will reflect in the increased projects, but the firm's revenue may remain unchanged. The firm must decide to replace those assets with new assets that operate more economically.

Expansion: A company may add capacity to its existing product lines to expand existing operations. Expansions of a new business require investment in new products and new kind of production activity within the firm.

Diversification: It is the process of adding new business to the existing business of the company. A diversified company is one that has two or more distinct business. In other words, diversification adds new products or market to the existing one.

Research and Development: Where technology is rapidly changing, large sums need to be spent on research and development for investing on new and innovative products or services.

Others: Which include miscellaneous proposals like acquiring a control device or expenditure to comply with certain health standards and so on.

Examples of capital budgeting decisions/ Benefits:

- Purchase of technology from a foreign country.
- Building a production facility.
- Interior decoration of a given building.
- Buying a new delivery truck.
- Making a new product.
- Expansion decisions of existing plant and equipment.
- Starting a new business.
- Advertising for the product or service or undertaking market survey.
- Safety and environmental protection investment decision.
- Labour agreements.

Significance of Capital Budgeting:

Capital budgeting decisions assume special significance for the following reasons:

- **Substantial capital outlay:** Capital budgeting decisions involve substantial capital out lay.
- **Long-term implications:** Capital budgeting proposals are of longer duration and hence have long-term implications.
- **Strategic in nature:** It can affect the future of the company significantly as it constitutes the strategic determinants for the success of a company.
- **Irreversible:** Once the funds are committed to a particular project, we cannot take back the decision. If the decision is to be reversed, we may have to lose a significant portion of the funds already committed.
- **Complexity:** Investment decisions are among the firm's most difficult decisions. They are all assessment of future events which are difficult to predict.

METHODS OF CAPITAL BUDGETING/INVESTMENT RANKING METHODS :

It is also known as techniques of capital budgeting. Capital budgeting decisions are made under different criteria. The investment evaluation criteria are studied into two ways.

1. Traditional methods/Non-Discounted cash flow methods.
2. Modern investment methods/Discounted cash flow method.

TRADITIONAL METHODS: For the purpose of investment evaluation criteria. The following methods are used under non-discounted cash flow techniques. such as

1. Payback Period (PB)

2. Accounting rate of return (ARR)

1. Payback Period:

The number of years are required to recover the initial out lay of the investment is called payback period. The pay back can be calculated with equal cash inflows and unequal cash inflows generating in future course of action.

$$\text{Payback period} = \frac{cost\ of\ the\ project}{Annual\ cash\ inflows}$$

Payback period is written as (PB) = $\frac{Co}{C}$.

Co=initial investment/cash outflow

C=equal cash inflows for the life period of the project.

Advantages:

1. Easy to understand and compute in expensive to use.
2. Emphasizes liquidity.
3. Easy and crude way to cope with risk.
4. Uses cash flows information.

Disadvantages:

1. It ignores the time value of money.
2. It does not measure profitability.
3. No relation with wealth maximization principle.

2. Accounting Rate of Return(ARR):

It is also known as average rate of return. ARR reference to the ratio of annual profits after taxes to the average investment. The higher the ARR is the better is the profitability and hence the projects with higher accounting rate of return are short listed for implementation.

ARR= Average annual profits after taxes / Average investment

ARR= $\frac{EBIT(1-T)}{Co}$

EBIT=Earnings before interest and taxes

T=Tax rate

Co=Initial investment

Merits:

1. Easy to understand and calculate.
2. Uses accounting data with which executives are familiar.
3. It considers all the cash inflows during the life of the project.

Demerits:

1. Ignores time value of money.
2. Does not use cash flows.
3. Give more weightage to future receipt.

MODERN METHODS:

Modern methods are also known as discounted cash flow method. Discounted cash flows methods are the improved methods over the traditional techniques. They consider the whole earnings of the proposal and the cost of the project because of these reasons, these methods are also called modern methods of investment appraisal.

A. Internal Rate of Return (IRR)
B. Net present Value (NPV)
C. Profitability Index (PI)

What are discounted cash flows?

Discounted cash flows are future cash inflows reduced to their present value based on a discounting factor. The process of reducing the future cash inflows to their present value based on a discounting factor or cut-off return is called discounting.

Time Value of Money

The value of money received today is different from the value of money received after sometime in the future. An important financial principle is that the value of money is time dependent.

INTERNAL RATE OF RETURN:

IRR is that of rate of return at which the present value of expected cash flows of a project exactly equals the original investment. In other words the discount rate which equates the present values of an investments cash inflows and outflows is its internal rate of return.

$$C = \frac{CF_1}{1+r} + \frac{CF_2}{(1+r)2} + - - - + \frac{CFn}{(1+r)n}$$

$$\sum_{t=1}^{n} = \frac{C_t}{(1+r)t} = C_O$$

Where C is the capital outlay

r is the internal of return

CF n is the cash outflow at different time periods

Advantages:

1. IRR is based on time value of money
2. It is independent of cost of capital
3. It is based on the earnings of all the years of the project
4. Generally consistence with wealth maximization principle.

Disadvantages:

1. Does not the value-additive principle
2. It is difficult to understand and tedious to calculate
3. There could be cases of non-conventional projects with multiple IRRs, which are difficult to understand.

NET PRESENT VALUE (NPV):

The difference between present value of cash inflows and present values of cash outflows is equal to net present value, the firms opportunity cost of capital being the discount rate.

$$\text{NPV} = \sum_{t=1}^{n} = \frac{C_t}{(1+k)t} - C_O$$

Where n =no of years of the life period of the project

T=Time period of the during accounting year

K=Cost of capital /Discounting facto/Present value

Ct=C1, C2, C3---------Cn (cash inflows for each year)

Co=Cash outflows/initial investment at zero period.

The total sum of each year present values of cash inflows.

Interpretation:

NPV>1 which means that the project earns more than the discount rate

NPV=1 which means project earns same as discount rate

NPV<1 which means that the project earns less than the discount rate

Merits:

1. Consider all cash inflows.
2. True measure of profitability.

3. Satisfy the value additive principles.
4. Consistent with wealth maximization principle.

De-merits:

1. Requires estimates of cash flows which is a tedious task.
2. Requires computation of opportunity cost of capital.
3. It is difficult to determine the appropriate discount rate.

PROFITABILITY INDEX (PI):

The ratio of the present value of the cash inflows to the initial outlay is profitability index

$$PI= \sum_{t=1}^{n} = \frac{C_t}{(1+r)t} / C_O$$

Limitations of Capital Budgeting:

1) Uncertainty in future.

2) Qualitative factor ignored.

3) Volatile business conditions.

4) Unrealistic assumption.

1. The cost of the project is 50,000 for the expected life of 5 years. The next five years cash inflows are 24000, 26000, 30000,70000 and 16000. Determine Payback period and ARR.

Solution:

Calculation of payback period for project:

Given that

Initial investment = 50,000

Years	Cash inflows	Cumulative Cash inflows	Payback period
1	24000	24000	2 years
2	26000	50000	
3	30000	80000	
4	70000	1,50,000	
5	16000	1,66,000	

Hence the payback period is 2 years.

Calculation of ARR for project**:**

ARR= ACIFAT/Co

ACIFAT= 24000+26000+30000+70000+16000/5
=1,66,000/5
=33200
ARR= 33200/50000
=0.664 X 100
= 66.4%
ARR of the project is 66.4%

2.The cost project is 20,000 and estimated life 5 years. The cash inflows are 8000,8000, 4000, 10000 and 9000. Calculate payback period and ARR.

Solution:

Calculation of payback period for project:

Years	Cash inflows	Cumulative Cash inflows	Payback period
1	8000	8000	3 Years
2	8000	16000	
3	4000	20000	
4	10000	30000	
5	9000	39000	

Hence the payback period is 3 years.

Calculation AAR for project B:

ARR= ACIFAT/Co

ACIFAT= 8000+8000+4000+10000+9000/5
=39000/5
=7800
ARR= 7800/20000
=0.39
ARR for project B is 39%

S. No	Method	Rank /Best project
1	Payback period	Project A
2	ARR	Project A

Among these projects project A is best one. Because project A payback period is 2 years and ARR is 66.4%.

3. A firm is considering with two projects with each one initial investment is 20,000/- and life of 4 years. The following is the list of estimated cash inflows after taxes.
Project A cash inflows are 12500, 12500, 12500 and 12500.
Project B cash inflows are 11750, 12250, 12500 and 13500.
Determine Payback period and ARR.

Solution:

Given that
Initial investment (Co) = 20,000

Calculation of payback period for project A:

Year	Cash inflows	Cumulative Cash inflows	Payback period
1	12500	12500	1+20000-12500/12500
2	12500	25000	=1+7500/12500
3	12500	37500	=1+ 0.6 =1+0.6 X 12
4	12500	50000	=1+7.2
			1 year and 7 months

Payback period for project A is 1.7 years.

Calculation of payback period for project B:

Year	Cash inflows	Cumulative Cash inflows	Payback period
1	11750	11750	1+20000-11750/12250
2	12250	24000	=1+ 8250/12250
3	12500	36500	=1+ 0.67 = 1+0.67X 12
4	13500	50000	=1+ 8.08
			1 year 8 months

Payback period for project B is 1.8 years.

Calculation of ARR for project A:

ARR= ACIFAT/AI
ACIFAT =12500+12500+12500+12500/4
=50,000/4
=12500
ARR= 12500/20000 =0.625
=62.5 %
ARR for project A is 62.5
ARR for project B is 62.5

4. ABC limited are considering the purchase of two machines A and B are available each cost is 50,000 there is no scrap. Earnings before interest and taxation expected cash inflows are as follows:

Year	Machine-A	Machine –B
1	15000	5000

2	20000	15000
3	25000	20000
4	15000	30000
5	10000	20000

Calculate payback period and ARR.

Solution: Given that initial investment (Co) =50,000

Calculation of payback period for Machine-A:

Year	Cash inflows	Cumulative Cash inflows	Payback period
1	15000	15000	=2+ 50000-35000/25000
2	20000	35000	=2+ 15000/25000
3	25000	60000	=2+ 0.6 =2+ 0.6X 12
4	15000	75000	=2+ 7.2
5	10000	85000	2 years and 7 months.

Calculation of payback period for Machine-B:

Year	Cash inflows	Cumulative Cash inflows	Payback period
1	5000	5000	=3+ 50000-40000/30000
2	15000	20000	=3 + 10000/30000
3	20000	40000	=3+0.33 =3+ 0.33 X12
4	30000	70000	=3+3.96
5	20000	90000	3 years and 4 Months

Hence, Payback period for machine B is 3.4 years.

Among these two machines Machine A is best one.

Calculation of ARR for Machine –A:

ARR=ACIFAT/AI

ACIFAT= 85000/5

=17000

Avg. Investment =Initial investment- Scrap/2

=50000-0/2

=50000/2

=25000

ARR= 17000/25000

=0.68 X100

=68%

Calculation of ARR for Machine –B:

ARR=ACIFAT/AI

ACIFAT= 90000/5

=18000

Avg. Investment =Initial investment- Scrap/2

=50000-0/2

=50000/2
=25000
ARR= 18000/25000
=0.72 X 100
= 72%

Among these two machines, Machine B is best one for ARR.

5. From the following data relating to Machine –I and machine-II cost 3,00,000/- each, estimated life 3 years, estimated scrap is 60,000/-, income tax rate 50% and additional working capital is 2,50,000/-.

The estimated cash inflows after taxes for each machine are given below:

Machine-I cash inflows are 1,50,000/-,3,00,000/-, 1,50,000/-

Machine-II Cash Inflows 2,00,000, 3,00,000, 2,50,000 and 1,50,000.

Solution:

Given that initial investment (Co) =3,00,000

Calculation of payback period for machine-I:

Sl. No	Cash inflows	Cumulative cash inflows	Payback period
1	1,50,000	1,50,000	1 + 300000-1,50000/300000 = 1+ 150000/300000 =1 + 0.5 = 1+0.5 X 12 =1year 6 six months
2	3,00,000	4,50,000	
3	1,50,000	6,00,000	

Payback period for machine –I is 1.6 years.

Calculation of payback period for Machine –II:

Sl. No	Cash inflows	Cumulative cash inflows	Payback period
1	200000	200000	1+ 300000-200000/300000 =1+ 100000/300000 =1+ 0.33 = 1+ 0.33X 12 =1+4 1 year and 4 Months
2	300000	500000	
3	250000	750000	
4	150000	900000	

Payback period for machine –II is 1.4 years.

Calculation of ARR for Machine –I:

ARR= ACIFAT/AI

ACIFAT=600000/3= 200000

Formula for Avg. investment = (cost-scrap/2) + working capital + scrap.

= (300000-60000/2) + 250000 + 60000
= (240000/2) +310000
=120000 +310000 = 430000
ARR = 200000/ 430000
= 0.465 X 100

= 46.5%

ARR for machine-I is 46.5%

Calculation of ARR for Machine –II:

ARR= ACIFAT/AI

ACIFAT = 900000/4

=2,25,000

ARR = 225000/430000

=0.523 = 0.523 X 100

=52.3%

6. Compute ABC company private limited considering to purchase machines A,B and C available each cost 5,00,000/-. The cash inflows after takes are gives below

Machine A	Machine B	Machine C
2,50,000	75,000	1,00,000
1,50,000	1,50,000	2,00,000
75,000	3,00,000	2,00,000
2,00,000	2,00,000	1,00,000
1,00,000	1,00,000	75,000

Calculate payback period, ARR,NPV and PI and give ranking of each machine .

Sol:

Machine A

Year	CIF(A)	CCIF(A)	PAY BACK PERIOD
1	2,50,000	2,50,000	3+500000-475000/200000
2	1,50,000	4,00,000	=3+25000/200000
3	75000	4,75,000	=3+ 0.125 X12
4	2,00,000	6,75,000	=3+1.5
5	1,00,000	7,75,000	3 years 1 month

Machine B

YEARS	CIF(B)	CCIF(B)	PAY BACK PERIOD
1	75000	75000	2+(500000-2,25,000)/300000
2	150000	225000	=2+275000/300000
3	300000	525000	=2+ 0.91 X 12
4	200000	725000	2 years 11 months
5	100000	825000	

Machine C

YEARS	CIF(C)	CCIF(C)	PAY BACK PERIOD
1	100000	100000	3 years
2	200000	300000	
3	200000	500000	
4	100000	60000	
5	75000	675000	

ARR

A =775000/5 B =825000/5 C =675000/5

=155000 =165000/500000 =135000/500000

=155000/500000 =0.33 X 100 =0.27 X 100

=0.31 X 100 =33% =27%

=31%

Calculation of Net Present Value for Machine A (NPV(A)):

NPV=C1 X (1/(1+k)1+C2 X (1/(1+k)2+C3 X (1/(1+k)3)+C4 X (1/(1+k)4)+C5 X 1/(1+k)5-Co

Present value factor @10%

K= 10%

1st year $1/ (1+10\%)^1$=1/1+10/100= 1/1+0.1 = 1/1.1 = 0.909

2nd year $1/(1.1)^2$= 0.826

3rd year= $1/(1.1)^3$ = 0.751

4th year=$1/(1.1)^4$=0.683

5th year=$1/(1.1)^5$=0.620

NPV =2,50,000 X 0.909+150000 X 0.826+75000 X 0.751+200000 X 0.683+100000 X 0.620 - 500000

=227250+123900+56325+136600+62000-500000

=606075-500000

=1,06,075

2nd Method:

YEAR	CIF	PV@10%	CIF X PV@10%
1	250000	0.909	227250
2	150000	0.826	123900
3	75000	0.751	56325
4	200000	0.683	136600
5	100000	0.620	62000
		TOTAL	606075

NPV= 606075-500000

=106075

PI for M-A:

=606075/500000

= 1.21

=1.21 X 100 = 121

Calculation of Net Present Value for Machine B (NPV (B)):

= (75000 X 0.909+150000 X 0.826+300000 X 0.751+200000 X 0.683+100000 X 0.620) - 500000

=68175+123900+225300+136600+62000-500000

=615975-500000

=115975

Calculation of Net Present Value for Machine C (NPV(C)):

= (100000 X 0.909+200000 X 0.826+200000 X 0.751+100000 X 0.683+75000 X 0.620) - 500000

=90900+165200+150200+68300+46500-500000

=521100-500000

=21,100

Calculation of Profitability Index for Machines:

(A)	(B) =615975/500000	(C)=521100/500000
=606075/500000	=1.23 X 100	=1.04X 100
1.212 X 100	=123%	=104%
=121%		

Rankings:

According To Pay Back Period

Machine B Is In 1st Rank

Machine C Is In 2nd Rank

Machine A Is In 3rd Rank

According To ARR:-Machine B Is In 1st Rank

Machine A Is In 2nd Rank

Machine C Is In 3rd Rank

According To NPV:- Machine B Is In 1st Rank

Machine A Is In 2nd Rank

Machine C Is In 3rd Rank

According To PI:- Machine B Is In 1st Rank

Machine A Is In 2nd Rank

Machine C Is In 3rd Rank

7. ABC limited are considering the purchase of 2 machines A and B are available. Each cost is 50000.Earning after taxation expected cash inflows are as follows

Machine A: 15000,20000,25000,15000 and 10000.

Machine B: 5000,15000,20000,30000 and 20000.

Determine 1) Payback period (2) ARR (3) NPV (4) Internal Rate Of Return (IRR) (5)PI

Sol:-

Machine A

YEAR	CIF(A)	CCIF(A)	CIF(B)	CCIF(B)	PB (A)	PB(B)
1.	15000	15000	5000	5000	2+(50000-35000)/(60000-35000) =2+(15000/25000) =2+3/5*12 2 years + 7 months	3+((50000-40000)/(70000-40000)) =3+10000/30000 =3+1/3*12 =3+ 4months =3 years 4 months
2.	20000	35000	15000	20000		
3.	25000	60000	20000	40000		
4.	15,000	75,000	30,000	70,000		
5.	10,000	85,000	20,000	90,000		

ARR (A) (B)

=85000/5=17000 =90000/5=18000

=17000/50000=0.34 =18000/50000

=34% =36%

Calculation of NPV for Machine A:-

NPV=C1 X (1/(1+k)1)+C2 X 1/(1+k)2+C3 X 1/(1+k)3+C4 X 1/(1+k)4+C5 X 1/(1+k)5

1st year=0.909

2nd year =0.826

3rd year =0.751

4th year=0.683

5th year=0.620

=15000 X 0.909+20000 X 0.826+25000 X 0.751+15000 X 0.683+10000 X 0.620- 50000

=13635+16520+18775+10245+6200- 50000

=65375-50000

=15375

Calculation of NPV for Machine B:

=5000 X 0.909+15000 X 0.826+20000 X 0.751+30000 X 0.683+20000 X 0.620-50000

=4545+12390+15020+20490+12400-50000

=64845-50000

=14845

PI for M-A:

=65375/50000

=1.307 = 1.307 X 100

=130.7

PI for M-B:

= 64845/50000

=1.296 =1.296 X 100

=129.6

CALCULATION OF IRR for machine A:
NPV@10% is 15375
NPV@21% is
$=1/(1+21\%)^1$ $=1/(1+21/100)^1$ $=1/(1+0.21)= 1/(1.21)=0.826$
$=1/(1.21)^2=0.683$
$=1/(1.21)^3=0.564$
$=1/(1.21)^4=0.466$
$=1/(1.21)^5=0.385$
=15000 X 0.826+20000 X 0.682+25000 X 0.564+15000 X 0.466+10000 X 0.385- 50000
=12390+13640+14100+6990+3850-50000
=50970-50000
= 970
NPV@ 22% is
1/1.22=0.819
$1/(1.22)^2=1/1.488=0.672$
$1/(1.22)^3=1/1.815=0.550$
$1/(1.22)^4=1/2.215=0.451$
$1/(1.22)^5=1/2.702=0.370$

=15000 X 0.819+20000X 0.672+25000 X 0.550+15000 X 0.451+10000 X 0.370-50000
=12285+13440+13750+6765+3700-50000
=49940-50000=-60

IRR:
NPV@21% is 970
NPV@22% is -60
IRR=21+ (970/(970-(-60)) X 1
=21+970/1030
=21+0.94
=21.94%
IRR for Machine A is 21.94%

IRR FOR MACHINE B:-
NPV@10% is 14845
NPV@25% is
=5000 X 0.800+15000 X 0.64+20000 X 0.512+30000X 0.409+20000X 0.327-50000
=4000+9600+10240+12270+6540-50000
=42650-50000
= -7350

NPV@10 is 14845

NPV@25% is -7350
IRR:
=10+(14845/(14845-(-7350))*15
= 10+ (14845/22195) X 15
=10+ (0.668) X 15
=10 + 10.032
=20.03 %
IRR for M-B IS 20.03%

8. From the following particulars of 3 proposals each costing 2,50,000. The cash inflows after taxes and depreciation

Proposal 1: 90,000, 1,60,000,1,20,000,70,000

Proposal:2 1,60,000, 1,20,000, 90,000, 1,50,000

Proposal:3 1,20,000,90,000,1,60,000,40,000.

Determine NPV@15%, IRR and PI.

Solution:

Present Value @ 15%

1 / (1+0.15)=1 / 1.15=0.869

$1 / (1.15)^2 = 1 / 1.322 = 0.756$

$1 / (1.15)^3 = 1 / 1.520 = 0.657$

$1 / (1.15)^4 = 1 / 1.749 = 0.571$

NPV FOR PROPOSAL I

=90,000 X 0.869 + 1,60,000 X 0.756 + 1,20,000 X 0.657 + 70,000 X 0.571 – 2,50,000

=78,210 + 1,20,960 + 78,840 + 39,970 - 2,50,000

=3,17,890 – 2,50,000

=67,980

NPV FOR PROPOSAL II

1,60,000 X 0.869 + 1,20,000 X 0.756 + 90,000 X 0.657 + 1,50,000 X 0.571 – 2,50,000

=1,39,040 + 90,720 + 59,130 + 85,650 – 2,50,000

= 3,74,540 – 2,50,000

= 1,24,540

NPV FOR PROPOSAL III

=1,20,000 X 0.869 + 90,000 X 0.756 + 1,60,000 X 0.657 + 40,000 X 0.571 – 2,50,000

=1,04,280 + 68,040 + 1,05,120 + 22,840 – 2,50,000

=3,00,280 – 2,50,000

=50,280

PI(I)=3,17,890 / 2,50,000 = 1.27 X 100 = 127%

PI(II)=3,74,540 / 2,50,000 = 1.49 X 100 = 149%

PI(III)=3,00,280 / 2,50,000 = 1.20 X100 = 120%

IPR FOR PROPOSAL I

NPV@15% is 67,980

NPV@30% is

1 / (1+0.3) = 1 / 1.3 =0.769

$1 / (1.3)^2$=0.591

$1 / (1.3)^3$=0.455

$1 / (1.3)^4$ = 0.350

=90,000 X 0.769 + 1,60,000 X 0.591 + 1,20,000 X 0.455 + 70,000 X 0.350 – 2,50,000

=69,210 + 94,560 + 54,600 + 24,500 – 2,50,000

=2,42,870 – 2,50,000

= - 7130

IRR

NPV@15% is 67,980

NPV@30% is -7130

15+(67,980 / (67,980-(-7130))) X 15

=15+(67,980 / 75110) X 15 =15 + (0.950) X 15

=15+13.57

=28.57%

IPR FOR PROPOSAL II

NPV@15% is 1,24,540

NPV@ 35% is

1 / (1+0.35)=1 / 1.35 =0.740 1/ $(1.35)^2$=0.548 1/ $(1.35)^3$=0.406

1 / $(1.35)^4$=0.301

1,60,000 X 0.740 + 1,20,000 X 0.548 + 90,000 X 0.406 + 1,50,000 X 0.301 – 2,50,000

=1,18,400 + 65,760 + 36,540 + 45,150 – 2,50,000

=2,65,850 – 2,50,000

=15,850

NPV@40% is

1 / (1+0.4)=1 / 1.4=0.714 1 /$(1.4)^2$=0.510 1 /$(1.4)^3$=0.364

1 / $(1.4)^4$=0.260

1,60,000 X 0.714 + 1,20,000 X 0.510 + 90,000 X 0.364 + 1,50,000 X 0.260 – 2,50,000

=1,14,240 + 61,200 + 32,760 + 39000 – 2,50,000

=2,47,200 – 2,50,000

= - 2,800

IRR

NPV@35% is 15,850

NPV@40% is -2,800

= 35+(15,850 / (15,850 - (-2,800))) X 5

=35 + (15,850 / 18,650) X 5 = 35 + (0.849) X 5

=35 + 4.24

=39.24%

IRR FOR PROPOSAL IIII

NPV@15% is 50,280

NPV@ 30% is

1,20,000 X 0.769 + 90,000 X 0.591 + 1,60,000 X 0.455 + 40,000 X 0.350 – 2,50,000

=92,280 + 53,190 + 72,800 + 14,000 – 2,50,000

=2,32,270 – 2,50,000

= - 17,730

NPV@15% is 50,280

NPV@30% is -17,730

= 15+(50,280 / (50,280 - (-17,730))) X 15

=15+(50,280 / 68010) X 15 = 15+ (0.739) X 15

=15 + 11.08

=26.08%

UNIT-V

FINANACIAL ACCOUNTING

Accounting: Every business organization want to know whether it is earning profits or not at the end of a given period. For this purpose, it has to prepare a statement containing profit and loss. It prepares a statement showing its assets and liabilities (Balance Sheet). In order to prepare these statements, the business organization has to maintain accounts.

On the other hand, human memory is limited so a trader cannot remember all the transactions of the business in a chronological order i.e buying and selling hence accounting is required to record business transactions. It becomes an aid to human memory.

Need of Accounting:

The main aim of business is to earn profit, for earning profit, the businessman will either purchase the goods in one market at certain price and sell it in another market at higher price or will convert the raw materials into finished products and sell it to the different customers at a price which will give him some percentage of profit on cost of production.

In order to achieve the above purposes it would be necessary to record business transactions accordingly to well devise system. Book-keeping (in elementary stage) and accounting (in advanced stage) is the name given to such a system.

Importance of accounting:

The importance of accounting is to provide meaningful information about a business enterprise to those persons who are directly interested in the performance and financial position of a business enterprise. Such persons may include owners, creditors, investors, employees, government, public, research scholars and the mangers.

1. **Owners (Shareholders)**:-They provide funds for the operations of the business and they want to know how well their funds are used. They need accounting information to know the profitability and financial position of the business.
2. **Creditors**: - Lenders and bankers are interested to know whether their loan, principal and interest, will be paid when due. They are also interest to know the ability of the firm to pay their dues in time.
3. **Investors**: The people who have surplus money and want to invest in share and debentures of a company are naturally interested in accounting information in order to

assess the safety of their investment and also profitability which enable them to decide whether to invest or not to invest.

4. **Employees:** Employees who are the back bone of the organization. They are interested both liquidity to get their monthly salaries and profitability to demand higher salaries and bonus.
5. **Government**: Government needs accounting information for compiling statistics concerning business which in turn help in computation of national income. The financial statements are also useful to the tax authority's to calculate taxable income of a firm.
6. **Public**: The public as consumers is interested in accounting statements in order to know whether control is exercised production, selling and distribution expenses in order to reduce the prices of goods they buy. They can also judge whether the economic resources of the concern are being utilized for the benefit of the common man or not.
7. **Research scholars:** Accounting information is the mirror of financial performance of any industry or a firm. Research scholars who undertake research in accounting theories as well as industry need accounting information.
8. **Managers**: Manager who has to take decisions as to improve the quality, reduce the price, assess the performance of the business, to expand the business etc, decisions can be taken on the basis of accounting information.
9. **Members of non-profit making organizations**: Non-profit making organizations such as colleges, clubs, charitable trusts, members need accounting information to know how well their contributed funds are utilizing.

Meaning of Book –Keeping and Double-Entry System:

Book keeping involves the chronological recording of financial transactions in a set of books in a systematic manner. "It is an art of correctly recording in books of accounts all those business transactions that result in transfer of money or money worth".

"It is an art of recording business transaction in a regular and systematic manner. Book keeping is the system of recording Business transactions for the purpose of providing reliable information to the owners and managers about the state and prospect of the Business concepts". Thus Book keeping is an art of recording business transactions in the books of original entry and the ledges.

Double-Entry System: According to this system, every transaction has two aspects. Both the aspects are recorded in the books of accounts. Accordingly one is giving aspect and other one is receiving aspects. Each aspect will be recorded in one account and this method of writing every transaction in two accounts is known as double-entry system of bookkeeping.

Dr. Particulars	Amount (Rs)	Cr. Particulars	Amount (Rs)

Types of Accounts: **T**hree types of accounts are maintained for recording all business transactions. They are: 1. Personal accounts 2. Real accounts 3. Nominal accounts

1. Personal Accounts: Accounts which are transactions with persons are called "Personal Accounts". A separate account is kept on the name of each person for recording the benefits received from or given to the person in the course of dealings with him.

E.g.: Krishna's A/C, Gopal's A/C, SBI A/C, Nagarjuna Finanace Ltd. A/C Etc.

2. Real Accounts: The accounts relating to properties or assets are known as "Real Accounts". Every business needs assets such as machinery, furniture etc, for running its activities. A separate account is maintained for each asset owned by the business.

E.g.: Furniture A/C, Building A/C, Machinery A/C etc.

3. Nominal Accounts: Accounts relating to expenses, losses, incomes and gains are known as "Nominal Accounts". A separate account is maintained for each item of expenses, losses, income or gain.

E.g.: Salaries A/C, stationery A/C, wages A/C, commission A/C, interest A/C etc.

Before recording a transaction, it is necessary to find out which of the accounts is to be debited and which is to be credited. The following three different rules have been laid down for the three classes of accounts….

1. Personal Accounts: The account of the person receiving benefit (receiver) is to be debited and the account of the person giving the benefit (given) is to be credited.

Rule: "Debit----The Receiver Credit---The Giver"

2. Real Accounts: When an asset is coming into the business, account of that asset is to be debited .When an asset is going out of the business; the account of that asset is to be credited.

Rule: "Debit----What comes in Credit---What goes out?"

3. Nominal Accounts: When an expense is incurred or loss encountered, the account representing the expense or loss is to be debited. When any income is earned or gain made, the account representing the income of gain is to be credited.

Rule: "Debit----All expenses and losses Credit---All incomes and Gains"

Definitions and Objectives of Accounting:

Definitions

1. "Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events which in part at least a financial characteristic and interpreting the result there of". (American Institute of certified public accounts (AICPA)

2. "Accounting system is a means of collecting, summarizing, analyzing and reporting the information in monetary terms". (R.N. Anthony.)

3. American Accounting Association (AAA) defines "Accounting as the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information".

Objectives of accounting:

The following are the main objectives of accounting

1. To maintain records of the business.
2. To ascertain profitability and financial position of the firm.
3. To adopt accounting principles for the preparation of the financial statements.
4. To communicate financial information to the users.
5. To implement the rules and policies of income tax act and companies act in the preparation of final accounts.
6. To generate such information from accounting records which may be helpful to various persons in planning, control, evaluation of performance and decision -making.

JOURNAL: The first step in accounting therefore is the record of all the transactions in the books of original entry. The word Journal is derived from the Latin word 'journ' which means a day. Therefore, journal means a 'day Book' in day-to-day business transactions are recorded in chronological order. All the business transactions are recorded in this book before they are posted in the ledges. The journal is a complete and chronological (in order of dates) record of business transactions. It is recorded in a systematic manner. The process of

recording a transaction in the journal is called "**JOURNALISING**". The entries made in the book are called "Journal Entries".

The pro-forma of Journal is given below.

Date	Particulars	L.F. no	Debit(Rs.)	Credit(Rs.)

LEDGER: All the transactions in a journal are recorded in a chronological order. After a certain period, if we want to know whether a particular account is showing a debit or credit balance it becomes very difficult. So, the ledger is designed to accommodate the various accounts maintained the trader. It contains the final or permanent record of all the transactions in duly classified form. "A ledger is a book which contains various accounts." The process of transferring entries from journal to ledger is called "**POSTING**".

The following are the guidelines for posting transactions in the ledger.

1. After the completion of Journal entries only posting is to be made in the ledger.
2. For each item in the Journal a separate account is to be opened.
3. For each account there must be a name and format is **"T"** shaped.
4. The debit side of the Journal to ledger entry is to be posted on the debit side of the account, by starting with "TO".
5. The credit side of the Journal to ledger entry is to be posted on the debit side of the account, by starting with "BY".

Pro-forma for ledger:

LEDGER BOOK

Particulars account

Dr. Cr.

Date	Particulars	L.F. no	Amount	Date	Particulars	L.F. no	Amount

Sales account

Date	Particulars	L.F. no	Amount	Date	Particulars	L.F. no	Amount

Cash account

Date	Particulars	L.F. no	Amount	Date	Particulars	L.F. no	Amount

Advantage of Accounting

The following are the advantages of Accounting

1. Provides for Systematic Records: Since all the financial transactions are recorded in the books, one need not rely on memory. Any information required is readily available from these records.
2. Facilitates the Preparation of Financial Statements: Profit and Loss account and balance sheet can be easily prepared with the help of the information in the records. This enables the trader to know the net result of Business operations (i.e. profit/loss) during the accounting period.
3. Provides Control Over Assets: Book keeping provides information regarding cash in hand, cash at bank, stock of goods, accounts receivable from various parties and the amounts invested in various other assets. As the trader knows the values of the assets he will have control over them.
4. Provides the Required Information: Interested parties such as owners, lenders, creditors etc, get necessary information at frequent intervals.
5. Comparative Study: One can compare present performance of the organization with that of its past. This enables the managers to draw useful conclusions and make proper decisions.
6. Less Scope for Fraud or Theft: It is difficult to conceal fraud or theft etc. because of the balancing of the books of accounts periodically. As the work is divided among many persons, there will be check and counter check.
7. Tax Matters: Properly maintained Book keeping records will help in the settlement of all tax matters with the tax authorities.

Limitations of Accounting

The following are the limitations of accounting…

1. Does Not Record All Events: Only the transactions of a financial character will be recorded under book keeping. So it does not reveal a complete picture about the quality of human resources, locational advantages, business contacts etc.

2. Does Not Reflect Current Values: The data available under book keeping is historical in nature. So they do not reflect current values. For instance we record the values of stock at cost price or market price, whichever is less.

3. Estimates Based on Personal Judgment: The estimates used for determining the values of various items may not be correct. For example, debtors are estimated in terms of collectibles, inventories are based on marketability and fixed assets are based on useful working life. These estimates are based on personal judgment and hence sometimes may not be correct.

4. Inadequate Information on Costs and Profits: Book keeping only provides information about overall profitability of the business. No information is given about the cost and profitability of different activities of products or divisions.

ACCOUNTING PRINCIPLES or GAAP:

Accounting principles:

Accounting principles based on certain concepts, convention, and tradition have been evolved by accounting authorities and regulators and are followed internationally. These principles, which serve as the rules for accounting for financial transactions and preparing financial statements, are known as the "Generally Accepted Accounting Principles," or GAAP. The application of the principles by accountants ensures that financial statements are both informative and reliable.

These principles can be classified into two categories such as Accounting concepts and Accounting conventions

Accounting Concepts

Business entity concept: A business and its owner should be treated separately as far as their financial transactions are concerned.

Money measurement concept: Only business transactions that can be expressed in terms of money are recorded in accounting, though records of other types of transactions may be kept separately.

Dual aspect concept: For every credit, a corresponding debit is made. The recording of a transaction is complete only with this dual aspect.

Going concern concept: In accounting, a business is expected to continue for a fairly long time and carry out its commitments and obligations. This assumes that the business will not be forced to stop functioning and liquidate its assets at "fire-sale" prices.

Cost concept: The fixed assets of a business are recorded on the basis of their original cost in the first year of accounting. Subsequently, these assets are recorded minus depreciation. No rise or fall in market price is taken into account. The concept applies only to fixed assets.

Accounting year concept: Each business chooses a specific time period to complete a cycle of the accounting process as per a financial or a calendar year. Generally Accounting year starts April 1st and ends with 31st March.

Matching concept: This principle dictates that for every entry of revenue recorded in a given accounting period, an equal expense entry has to be recorded for correctly calculating profit or loss in a given period.

Objective Evidence Concept: According to this concept all accounting transactions should be evidenced and supported by objective documents. The documents include invoices, vouchers, receipts, cash memos etc.

Historical Record Concept: The Accountant shows only those transactions which have actually taken place and not those which may take place in future. All transaction in accounting is to be recorded in the books in chronological order.

Realization concept: According to this concept, profit is recognized only when it is earned. An advance or fee paid is not considered a profit until the goods or services have been delivered to the buyer.

Accounting Conventions

There are four main conventions in practice in accounting: conservatism; consistency; full disclosure; and materiality.

Conservatism is the convention by which, when two values of a transaction are available, the lower-value transaction is recorded. By this convention, profit should never be overestimated, and there should always be a provision for losses.

Consistency prescribes the use of the same accounting principles from one period of an accounting cycle to the next, so that the same standards are applied to calculate profit and loss.

Materiality means that all material facts should be recorded in accounting. Accountants should record important data and leave out insignificant information.

Full disclosure entails the revelation of all information, both favorable and detrimental to a business enterprise, and which are of material value to creditors and debtors.

TRAIL BALANCE:

The first step in the preparation of final accounts is the preparation of trail balance. A trail balance is a statement of debit and credit balances. It is prepared on a particular date with the object of checking the accuracy of the books of accounts.

Definition: A trail balance is a list of all the balances standing on the ledger accounts and cash book of a concern at any given date.

Pro-forma for Trail Balance:

Trail balance for M/s. …… as on ……

Sl. No	Name Of Account (Particulars)	Debit Amount (Rs.)	Credit Amount (Rs.)

Specimen of trial balance

1	Capital	Credit	Loan	30	Petty expenses	Debit	Expense
2	Opening stock	Debit	Asset	31	Trade expenses	Debit	Expense
3	Purchases	Debit	Expense	32	Petty receipts	Credit	Revenue
4	Sales	Credit	Gain	33	Income tax	Debit	Drawings
5	Returns inwards	Debit	Loss	34	Office expenses	Debit	Expense
6	Returns outwards	Debit	Gain	35	Customs duty	Debit	Expense
7	Wages	Debit	Expense	36	Sales tax	Debit	Expense
8	Freight	Debit	Expense	37	Investments	Debit	Asset
9	Transport expenses	Debit	Expense	38	Debtors	Debit	Asset
10	Royalities on production	Debit	Expense	39	Provision for discount on creditors	Debit	Asset
11	Gas, fuel	Debit	Expense	40	Creditors	Credit	Liability
12	Discount received	Credit	Revenue	41	Goodwill	Debit	Asset
13	Discount allowed	Debit	Loss	42	Plant, machinery	Debit	Asset
14	Bad debts	Debit	Loss	43	Land, buildings	Debit	Asset
15	Bab debts reserve	Credit	Gain	44	Furniture, fittings	Debit	Asset
16	Commission received	Credit	Revenue	45	Provision for discount on debtors	Debit	Liability
17	Repairs	Debit	Expense	46	Cash in hand	Debit	Asset
18	Rent	Debit	Expense	47	Cash at bank	Debit	Asset
19	Salaries	Debit	Expense	48	Reserve fund	Credit	Liability
20	Loan Taken	Credit	Loan	49	Loan advances	Debit	Asset
21	Interest received	Credit	Revenue	50	Horse, carts	Debit	Asset
22	Interest paid	Debit	Expense	51	Excise duty	Debit	Expense
23	Insurance	Debit	Expense	52	General reserve	Credit	Liability
24	Carriage outwards	Debit	Expense	53	Provision for depreciation	Credit	Liability
25	Advertisements	Debit	Expense	54	Bills receivable	Debit	Asset
26	Bills payable	Credit	Liability	55	Prepaid insurance	Debit	Asset
27	Depreciation	Debit	Loss	56	Bad debt reserve	Credit	Revenue
28	Bank overdraft	Credit	Liability	57	Motor vehicle	Debit	Asset
29	Outstanding salaries	Credit	Liability	58	Outstanding rent	Credit	Revenue

FINAL ACCOUNTS:

TRADING ACCOUNT: The first step in the preparation of final account is the preparation of trading account. The main purpose of preparing the trading account is to ascertain gross profit or gross loss as a result of buying and selling the goods.

Trading account of M/s……. for the year ended ……

Dr. Cr.

Particulars	Amount	Particulars	Amount
To opening stock	XXXX	By sales XXXX	
To purchases XXXX		Less: returns XXX	XXXX
Less: returns XXX	XXXX	By closing stock	XXXX
To carriage inwards	XXXX		
To wages	XXXX		
To freight	XXXX		
To customs duty	XXXX		
To gas, fuel, coal & Water	XXXX		
To factory expenses	XXXX		
To direct Expenses	XXXX		
To productive expenses	XXXX		
To gross profit c/d	XXXX		
	XXXX		XXXX

Profit and Loss Account: The business man is always interested in knowing his net income or net profit. The debit side of profit and loss account shows the expenses and the credit side the incomes. If the total of the credit side is more, it will be the net profit and if the debit side is more, it will be net loss.

Profit and Loss A/C of M/S…….For The Year Ended……

Dr. Cr.

Particulars	**Amount**	**Particulars**	**Amount**
To office salaries	XXXX	By gross profit b/d	XXXX
To Rent, rates, taxes	XXXX	Interest received	XXXX
To Printing and stationery	XXXX	Discount received	XXXX
To Legal charges & Audit fee	XXXX	Commission received	XXXX
To Insurance	XXXX	Income from investments	XXXX
To General expenses	XXXX	Dividend on shares	XXXX
To Advertisements	XXXX	Miscellaneous investments	XXXX
To Bad debts	XXXX	Rent received	XXXX
To Carriage outwards	XXXX		
To Repairs	XXXX		
To Depreciation	XXXX		
To Interest paid	XXXX		
To Interest on capital	XXXX		
To Interest on loans	XXXX		
To Discount allowed	XXXX		
To Commission	XXXX		
To Net profit-------→	XXXX		
(transferred to capital a/c)	XXXX		XXXX

BALANCE SHEET: The second point of final accounts is the preparation of balance sheet. It is prepared often in the trading and profit & loss accounts have been compiled and closed. A balance sheet may be considered as a statement of the financial position of the concern at a given date.

Balance Sheet of …… As On ……

Dr. Cr.

Liabilities and capital	Amount	Assets	Amount
Creditors	XXXX	Furniture and fittings	XXXX
Bills payable	XXXX	Plant& machinery	XXXX
Bank overdraft	XXXX	Land & buildings	XXXX
Loans	XXXX	Patents, copyrights	XXXX
Mortgage	XXXX	Goodwill	XXXX
Reserve fund	XXXX	Investments	XXXX
Capital XXXX		Prepaid expenses	XXXX
Add:		Outstanding incomes	XXXX
Net Profit XXXX		Cash in hand	XXXX
-------		Cash at bank	XXXX
XXXX		Bills receivable	XXXX
--------		Debtors	XXXX
		Closing stock	XXXX
Less:			
Drawings XXXX			
	XXXX		
	XXXX		XXXX

Advantages: The following are the advantages of balance Sheet

1. It helps in checking the arithmetical accuracy of books of accounts.
2. It helps in the preparation of financial statements.
3. It helps in detecting errors.
4. It serves as an instrument for carrying out the job of rectification of entries.
5. It is possible to find out the balances of various accounts at one place.

Final Accounts -- Adjustments

We know that business is a going concern. It has to be carried on indefinitely. While preparing these financial statements, sometimes the trader may come across certain problems. As such these adjustments are to be made while preparing the final accounts. The adjustments to be made to final accounts will be given under the Trial Balance. The following are some of the important adjustments to be made at the time of preparing of final accounts:-

1. Closing Stock: (i) If closing stock is given in Trail Balance: It should be shown only in the balance sheet "Assets Side".

(ii)If closing stock is given as adjustment: First, it should be posted at the credit side of "Trading Account". Next, shown at the asset side of the "Balance Sheet".

2. Outstanding Expenses: (i) If outstanding expenses given in Trail Balance: It should be only on the liability side of Balance Sheet.

(ii)If outstanding expenses given as adjustment:

1. First, it should be added to the concerned expense at the debit side of profit and loss account or Trading Account.
2. Next, it should be added at the liabilities side of the Balance Sheet.

3. Prepaid Expenses: (i) If prepaid expenses given in Trial Balance: It should be shown only in assets side of the Balance Sheet.

(ii)If prepaid expense given as adjustment:

1. First, it should be deducted from the concerned expenses at the debit side of profit and loss account or Trading Account.
2. Next, it should be shown at the assets side of the Balance Sheet.

4. Income Earned But Not Received [Or] Outstanding Income [Or] Accrued Income:-

(i) If incomes given in Trial Balance: It should be shown only on the assets side of the Balance Sheet.

(ii)If incomes outstanding given as adjustment:

1. First, it should be added to the concerned income at the credit side of profit and loss account.
2. Next, it should be shown at the assets side of the Balance sheet.

5. Depreciation: (i) If Depreciation given in Trail Balance: It should be shown only on the debit side of the profit and loss account.

(ii) If Depreciation given as adjustment

1. First, it should be shown on the debit side of the profit and loss account.
2. Secondly, it should be deduced from the concerned asset in the Balance sheet assets side.

6. Interest on Loan [Or] Capital: (i)If interest on loan (or) capital given in Trail balance: It should be shown only on debit side of the profit and loss account.

(ii) If interest on loan (or) capital given as adjustment:

1. First, it should be shown on debit side of the profit and loss account.

2. Secondly, it should add to the loan or capital in the liabilities side of the Balance Sheet.

7. Bad Debts: (i) If bad debts given in Trail balance: It should be shown on the debit side of the profit and loss account.

(ii) If bad debts given as adjustment:

1. First, it should be shown on the debit side of the profit and loss account.
2. Secondly, it should be deducted from debtors in the assets side of the Balance Sheet.

Problem 1

Journalise the following transaction in the books of ABC limited.

2010 July 1 ABC limited commenced business with Rs. 5000/-

5 Deposited into bank Rs. 4000/-

6 Purchases goods worth Rs. 10,000/- from kamal

Solution:

Date	Particulars	Ledger Folio	Amount Dr. Rs.	Amount Cr. Rs.
2010 July 1	Cash account Dr. To ABC limited Capital A/c (Being the business commenced)		5,000	5,000
July 5	Bank account Dr. To cash A/c (Being the cash deposited into bank)		4,000	4,000
July 6	Goods Account Dr. To kamal A/c (Being the goods purchased from kamal on credit)		10,000	10,000

Problem – 2

The following transaction in the books of Laxman and prepare necessary ledger accounts.

2016 January 1. Laxman commenced Business with Rs.15,000/-

2. Paid into bank Rs. 10,000/-

3. Purchased goods from B's for 2000/-

4. Returned goods to B for 200/-

5. Paid to B in full settlement of A/c Rs.1700/-

7. Received interest from the bank Rs.750/-

9. Sold goods for cash Rs.7000/-

12. Sold goods for Raki for Rs. 4000/-

15. Received goods worth Rs. 100/- from raki with complaint about damage

16. Paid salaries Rs.400/-

17. Entertainment Rs.50/-

20. Received a cheque from Raki Rs.500/-

25. Issued a cheque for Rs. 1000/- towards rent to landlord.

Solution: Preparation of Ledger Accounts

Cash Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan1 Jan 7	To Laxman A/c To interest A/c		15,000 750	2016 Jan2	By Bank		10,000

Sales Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 31	To balance c/d		11,000 11,000	2016 Jan9 Jan 12 Feb 1	By cash A/c By Raki A/c By balance c/d		7,000 4,000 11000 11000

Raki Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 12	To Sales A/c		4000 4000	2016 Jan 15 20	By Sales returns A/c By cash A/c By balance		100 500

Feb 1	By Balance b/fd		3400	31	c/d		3400 4000

Purchase Returns Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 31	To balance c/d		200 200	2016 Jan4 Feb 1	By B account By balance c/d		200 200 200

Bank Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan2 Jan 20 Feb 1	To Cash A/c To Raki A/c By Balance b/fd		10,000 500 10,500 10,500	2016 Jan 25	By Rent By balance c/d		1000 9,500 10,500

Rent Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 25 Feb 1	To Bank A/c By Balance b/fd		1000 1000 1000	2016 Jan 31	By balance c/d		1000 1000

Salaries Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 16 Feb 1	To Cash A/c By Balance		400 400 400	2016 Jan 31	By balance c/d		400 400

	b/fd						

Entertainment Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 17	To Cash A/c		50	2016 Jan 31	By balance c/d		50
			50				50
Feb 1	By Balance b/fd		50				

Purchase Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 3	To B A/c		2000	2016 Jan 31	By balance c/d		2000
			2000				2000
Feb 1	By Balance b/fd		2000				

Sales Returns Account

Dr. **Cr.**

Date	Particulars	F	Amount(Rs.)	Date	Particulars	F	Amount(Rs.)
2016 Jan 15	To Raki A/c		100	2016 Jan 31	By Balance c/d		100
Feb 1			100				
	By Balance b/fd		100				100

Problem 3

Make a trail balance as on 31.12.2018 from the following information

Particulars	**Amount (Rs.)**
Sundry debtors	3200
Stock	22000
Cash in hand	35
Cash at bank	1545
Plant & Machinery	17500
Sundry creditors	10650
Trade expense	1075

Sales	234500
Salaries	2225
Carriage outwards	400
Rent	900
Bills payable	7500
Purchases	218870
Discounts	1100
Capital	79,500
Business premises	34,500

Solution: Trail Balance as on December 31, 2018

Sl. No	Particulars	Debit (Rs.)	Credit (Rs.)
1	Sundry debtors	3200	
2	Stock	22000	
3	Cash in hand	35	
4	Cash at bank	1545	
5	Plant & Machinery	17500	
6	Sundry creditors		10650
7	Trade expense	1075	
8	Sales		234500
9	Salaries	2225	
10	Carriage outwards	400	
11	Rent	900	
12	Bills payable		7500
13	Purchases	218870	
14	Discounts	1100	
15	Capital		79,500
16	Business premises	34,500	
	Total	**3,32,150**	**3,32,150**

Problem 4

Prepare (a) Trading Account (b) Profit & Loss Account and (c) Balance Sheet from the following Ramu's trial balance for the year ending 31.03.2019.

Sl. No	Particulars	Debit (Rs.)	Credit (Rs.)
1	Drawings	4000	
2	Discount allowed	1500	
3	Discount received		500
4	Office expenses	2000	
5	Manufacturing expenses	1200	

6	Bills payable		17000
7	Bills receivable	10,000	
8	Cash in hand	4800	
9	Cash at bank	30800	
10	Office rent	3600	
11	Ramu's capital		200000
12	Stock	32000	
13	Machinery	60,000	
14	Wages	100000	
15	Carriage inwards	1000	
16	Repairs	800	
17	Fuel & power	5000	
18	Furniture	11000	
19	Sales		407200
20	Buildings	80000	
21	Creditors		25000
22	Sundry debtors	40000	
23	Salaries	10000	
24	Factory Rent	4800	
25	Rent outwards		4000
26	Rent inwards	7200	
27	Purchases	244000	
	Total	**653700**	**653700**

Adjustments: closing stock Rs.40000

Solution:

Preparation of Trading Account

Trading account for the year ending 31.3.2019

(In the books of Ramu)

Dr. Cr.

Particulars	Rs.	Particulars	Rs.

To opening stock		32000	By sales	407200	
			Less: sales returns	7200	400000
To purchases	244000		By closing stock		40000
Less: purchases returns	4000	240000			
To wages		100000			
To carriage inwards		1000			
To manufacturing expenses		1200			
To fuel and power		5000			
To factory rent		4800			
To gross profit transferred to profit and loss account		**56000**			
		440000			440000

Preparation of Profit & Loss Account

Profit and loss A/c for the year ending 31.3.2019

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To salaries	10000	By gross profit	56000
To repairs	800	By discounts received	500
To discounts allowed	1500		
To office expenses	2000		
To office rent	3600		
To net profit transferred to capital account	38600		
	56500		**56500**

Preparation of Balance Sheet

Balance sheet as on 31.3.2019

(In the books of Ramu)

Dr. Cr.

Liabilities		Rs.	Assets	Rs.
Long term liabilities:			**Fixed Assets:**	
Ramu's capital	200000		Buildings	80000
Add: net profit from Profit & loss A/c	38600		Plant & machinery	60000
	238600		Furniture's & fixtures	11000
			Current Assets:	

			Stock		40000
Less : drawings		4000	Sundry debtors		40000
Current Liabilities			Bills receivables		10000
Sundry creditors		25000	Cash at bank		30800
Bills payable		17000	Cash in hand		48000
Total		**276600**	**Total**		**276600**

Problem 5

Jevan is a sole proprietor having a provisions store. Following are the transactions during the month of January, 2018. Journalise them.

Jan. 1. Commenced business with cash Rs. 80,000

2 Deposited cash with bank Rs. 40,000

3 Purchased goods by paying cash 5,000

4 Purchased goods from Lipton & Co. on credit Rs. 10,000

5 Sold goods to Joy and received cash Rs.11,000

6 Paid salaries by cash Rs.5,000

7 Paid Lipton & Co. by cheque for the purchases made on 4th Jan.

8 Bought furniture by cash Rs.4,000

9 Paid electricity charges by cash Rs. 1,000

10 Bank paid insurance premium on furniture as per standing instructions Rs. 300

Solution:

In the books of Jevan

Date	Particulars	L.F	Debit (Rs.)	Credit (Rs.)
2018 Jan 1	Cash A/c Dr. To Jevan capital A/c (Being the business commenced)		80000	 80000
2	Bank account Dr. To cash A/c (being the cash deposited into bank)		40000	 40000
3	Purchase A/c Dr. To Cash A/c (Being the goods purchased from cash)		5000	 5000

4	Purchase A/c Dr. To Lipton & Co A/c (Being the goods purchased on credit)		10000	10000
5	Cash A/c Dr. To sales A/c (cash sales made)		11000	11000
6	Salaries A/c Dr. To cash A/c (Salaries paid)		5000	5000
7	Lipton & Co. A/c Dr. To Bank A/c (payment made by cheque)		10,000	10,000
8	Furniture A/c Dr. To Cash A/c (furniture bought for cash)		4000	4000
9	Electricity Charges A/c Dr. To cash A/c (Electricity charges paid)		1000	1000
10	Insurance premium A/c Dr. To bank A/c (Insurance premium on furniture paid)		300	300

Problem 6

Make a trial balance as on 31.12.2018 from the following information

Sl. No	Particulars	Amount (Rs.)
1	Cash account	10,600
2	Capital account	15000
3	Interest from bank	750
4	Discount account	100
5	Sales account	11000
6	Don account	3400
7	Purchases returns account	200
8	Bank account	9500
9	Rent account	1000
10	Salaries account	400
11	Entertainment account	50
12	Purchases account	2000
13	Sales returns account	100

Solution:

Sl. No	Particulars	Debit (Rs.)	Credit (Rs.)
1	Cash account	10,600	
2	Capital account		15000
3	Interest from bank		750
4	Discount account		100
5	Sales account		11000
6	Don account	3400	
7	Purchases returns account		200
8	Bank account	9500	
9	Rent account	1000	
10	Salaries account	400	
11	Entertainment account	50	
12	Purchases account	2000	
13	Sales returns account	100	
Total		**27,050**	**27,050**

Problem 7

From the following trial balance of ABC limited, prepare trading account and profit& loss account for the year ending March 31, 2019. Also prepare a balance sheet as on the date.

Trial balance as on March 31, 2019

Debit balances (Dr.)	Amount (Rs.)	Credit balances (Dr.)	Amount (Rs.)
Electricity	14000	Interest	16000
Land	140000	Discount	6000
Interest	16000	Sales	800000
Wages	50000	Returns	10000
Opening stock	20000	Sundry creditors	60000
Rent	24000	Capital	302000
Purchase	300000	Bills payable	15000
Office expenses	30000		
Building	400000		
Salaries	90000		
Power, gas and water	30000		
Returns	20000		
Furniture	15000		

Sundry debtors	60000		
	12,09,000		**12,09,000**

Adjustments:

1. Outstanding salaries Rs.10,000
2. Closing stock Rs.80,000
3. Depreciate building @ 10 per cent per annum
4. Interest received in advance Rs. 2000
5. Write off bad debts Rs. 10,000

Solution:

Preparation of Trading Account:

(In the books of ABC Limited)
Trading account for the year ending March, 2019

Dr. Cr.

Particulars		Rs.	Particulars		Rs.
To opening stock		20000	By sales	800000	
			Less: sales returns	20000	780000
To purchases	300000		By closing stock		80000
Less: purchases returns	10000	290000			
To wages		50000			
To Power, Gas and water		30000			
To gross profit transferred to profit and loss account		**470000**			
		860000			**860000**

Preparation of Profit & Loss Account

Profit and loss A/c for the year ending 31.3.2019

Dr. Cr.

Particulars		Rs.	Particulars		Rs.
To salaries	90000		By gross profit		470000
Add: outstanding	10000	100000	By discounts received		6000
To electricity		14000	By interest received	16000	
To interest		16000	Less: received in advance	2000	14000
To rent		24000			
To bad debt (adjustment)		10000			
To office expenses		30000			
To provision for depreciation:					
Buildings		40000			
To net profit transferred to capital account		**2,56,000**			
		4,90,000			**4,90,000**

Preparation of Balance Sheet

Balance sheet as on 31.3.2019
(In the books of ABC Limited)

Dr. Cr.

Liabilities		Rs.	Assets		Rs.
Long term liabilities:			**Fixed Assets:**		
ABC Limited capital	302000		Land		140000
Add: net profit from Profit & loss A/c			Buildings	400000	
	256000	558000	Less: depreciation	40000	360000
			Furniture's & fixtures		150000
Current Liabilities			**Current Assets:**		
Sundry creditors		60000	Stock		80000
Bills payable		15000	Sundry debtors	60000	
Outstanding salaries		10000	Less: new bad debts	10000	50000
Interest received in advance		2000			
Total		**645000**	**Total**		**645000**

UNIT-VI

FINANCIAL STATEMENTS

Analysis of financial statements is an interpretation of financial results.

RATIO ANALYSIS

Ratio analysis is the process of determining and interpreting numerical relationships based on financial statements. By computing ratios, it is easy to understand the financial position of the firm. Ratio analysis is used to focus on financial issues such as liquidity, profitability and solvency of a given firm.

Importance

1. Ratio's act as an index of efficiency of a concern.
2. They are useful in evaluating performance.
3. They help management in exercising effective decisions.
4. They help management to take corrective actions.
5. Ratios serve as an instrument of management control.

TYPES OF RATIOS

From the point of view of financial analysis or financial manager, the ratios can be categorised on the basis of liquidity, solvency, operational efficiency and profitability into viz.

1. Liquidity Ratios
2. Solvency Ratios
3. Activity or efficiency Ratios
4. Profitability Ratios.

LIQUIDITY RATIOS

Liquidity ratios express the ability of the firm to meet its short-term commitments as and when they become due. Creditors are interested to know whether the firm will be in a position to meet its commitments on time or not.

Liquidity ratios help in identifying the danger signals for the firm in advance all financing companies offering short-term finances are interested in these ratios.

Liquidity ratios can be classified into two types

a) Current Ratio

b) Quick Ratio.

Current Ratio: Current ratio is the ratio between current assets and current liabilities. The firm is said to be comfortable in its liquidity position in the current ratio is **2:1**. However it may vary from one industry sector to the other. In other words, for every rupee of current liability, there should be two rupees worth current assets. The interests of the creditors are safeguard if the current ratio is at least **2:1**.

$$\text{Current Ratio} = \frac{\textit{Current Assets}}{\textit{Current Liabilities}}$$

The current assets include stock, debtors, bills receivable, cash at banks, cash in hand, prepaid expenses, income yet to be received, and soon. All these are short-term assets.

The current liabilities are creditors; bank overdraft payable in a period less than one year duration, bills payable, outstanding expenses, income received in advance, all provisions, dividends payable and so on.

The current ratio is also called working capital ratio. It is related to the working capital of the firm. The higher current ratio, the better is the coverage of current assets for the short-term claims.

Quick Ratio: Quick ratio is also called acid test ratio. It measures the firm's ability to convert its current assets quickly into cash in order to meet its current liabilities. It is the ratio between liquid assets and liquid liabilities. It supplements the information given by current ratio.

$$\textit{Quick Ratio} = \frac{\textit{Quick Assets}}{\textit{Current Liabilities}}$$

Where Quick Assets=current assets- (stock+ prepaid expenses).

The standard for this ratio is **1:1**. In other words, for every rupee of quick liability, there should be one-rupee worth quick assets. The quick ratio when read along with current ratio provides better picture of the firm's ability to meet its short-term commitments with the short-term assets.

SOLVENCY RATIOS/LONG-TERM RATIOS: Solvency ratios are also known as capital structure ratios or leverage ratios is defined as "the financial ratio, which focuses on the long-term solvency of the firm". The long-term solvency of the firm is always reflected in its ability to meet its long-term commitments.

All the financial institutions offering long-term finances are interested in these ratios. The following are the most commonly used capital structure ratios:

A) Debt-equity ratio

B) Interest coverage ratio

C) Ratio of proprietor's fund to total assets

i) Ratio of fixed assets to proprietor's funds.

ii) Ratio of current assets to proprietors funds.

A) Debt-Equity (D/E) Ratio: Debt-equity ratio is the ratio between outsider's funds (debt) and insider's fund (equity). This is used to measure the firm's obligations to creditors in relation to the owner's funds. The yardstick for this ratio is **1:1.** In other words, for every rupee of debt, there should be one-rupee worth internal funds.

Debt-equity ratio is calculated as follows

$$Debt - Equity\ Ratio = \frac{Debt}{Equity}$$

(Or)

$$Debt - Equity\ Ratio = \frac{Out\ siders\ Fund}{Insiders\ Fund\ (or)\ Shares}$$

Debt or outsiders' funds include debentures, bonds, and long-term loans and so on.

Equity or shareholders' funds include share capital, reserves, retained earnings and such others.

B) Interest coverage ratio: It is calculated to judge the firm's capacity to pay the interest on debt it borrows. It is a very important ratio for the financial institutions to judge the ability of the borrower to service the loan from the current year profits.

$$Interest\ Coverage\ Ratio = \frac{Net\ Profit\ before\ Interests\ and\ Taxes}{Fixed\ Interset\ Charges}$$

C) Ratio of proprietor's fund to total assets: This establishes the relationship between proprietor's fund and the total assets. Here the total assets include the tangible fixed assets plus current assets.

This shows that the proprietors have solid stake in the organisation.

$$\textbf{Ratio of Proprietor's fund to total assts} = \frac{Proprietor's\ Fund}{Total\ Assets}\ X\ 100$$

i) Ratio of fixed assets to proprietor's funds: This ratio explains whether the fixed assets have been bought from the proprietor's funds or not. The long-term sources of finance can be used for buying current assets but no short-term sources of finance can be utilised to acquire fixed assets.

This ratio shows the percentage of proprietor's fund locked up in fixed assets. Normally for industrial establishments this can be **65%** of the proprietor's funds.

$$\text{Ratio of Fixed Assets to Proprietors Fund} = \frac{Fixed\ Assets}{Proprietor's\ Fund}\ X\ 100$$

ii) Ratio of current assets to proprietors' funds: A higher ratio of current assets to proprietor's fund is considered as financial strength to the business. It is necessary to hold adequate funds in working capital to generate profits.

$$\text{Ratio of Current Assets to Proprietors Fund} = \frac{Current\ Assets}{Proprietor's\ Fund}\ X\ 100$$

PROFITABILITY RATIOS: Profitability ratios throw light on how well the firm is organising its activities in a profitable manner. The owners except reasonable rate of return on their investment. The firm should generate enough profits not only to meet the expectations of the owners but also to finance the expansion activities. The following are ratios most commonly used to explain profitability.

1) Gross profit Ratio: Gross profit Ratio is the ratio between gross profits to sales during a given period. It is expressed in terms of percentage. Gross profit is the difference between the net sales and the cost of goods sold.

$$\text{Gross Profit Ratio} = \frac{Gross\ Profit}{Sales}\ X\ 100$$

Gross profit should be adequate to cover the operating expenses and to provide fixed charges, dividends and reserves. The higher the gross profit ratio is better.

2) Net Profit Ratio: Net profit ratio is the ratio between net profits after taxes and net sales. It indicates what portion of sale is left to the owners after operating expenses. Non-operating income such as interest on investments, gain on sale or fixed assets and so on is added to the operating profit and non-operating expenses such as loss on sale of fixed assets and so on are deducted from such profit.

$$\text{Net Profit Ratio} = \frac{Net\ Profit\ after\ taxes}{Net\ Sales}\ X\ 100$$

3) Operating Ratio: Operating Ratio is the ratio between cost of goods sold plus operating expenses and the net sales. This is expressed as a percentage to net sales. The higher the operating ratio, the lower is the profitability and vice versa.

$$\text{Operating Ratio} = \frac{Operating\ Expenses}{Net\ Sales}\ X\ 100$$

Where operating expenses= (cost of goods sold + administrative expenses + selling and distribution expenses)

4) Earning per Share (EPS): EPS is the relationship between net profits and the number of shares outstanding at the end of the given period. This can be compared with previous year to provide a basis for assessing the company's performance.

$$\text{EPS} = \frac{Net\ Profit\ after\ taxes}{No.\ of\ Shares\ out\ standing}$$

5) Dividend yield: Yield refers to the amount of total return the investor will receive for a given period of time for amount of his investment.

Dividend yield refers to the percentage return on the price for shares. It is the ration of nominal or face value of share to market price for share. It is calculated as given below.

$$\text{Dividend Yield} = \frac{Nominal\ or\ Face\ Value\ of\ shares}{Cost\ or\ Market\ Price\ of\ the\ Share}\ X\ \%\ Dividend\ Per\ Annum$$

6) Price/ Earnings Ratio: It is the ratio of Market price per share and earning per share. This is the share price divided by the earning per share.

$$\text{Price /Earing Ratio} = \frac{Market\ Price\ per\ Share}{Eanings\ Per\ Share}$$

7) Returns on Investment (ROI): ROI is one of the very important parameters affecting business plans. The profitability of the firm is measured in terms of return on investment. It is the ratio of net profit after taxes and total investment.

$$\text{ROI} = \frac{Net\ Profit\ after\ Taxes}{Total\ Investment}$$

COMPARATIVE STATEMENT ANALYSIS:

Business organisations prepare financial statements in order to determine their financial position for a particular period. The primary purpose of preparing financial statements is to get an idea about the financial soundness of the organisation.

What are Comparative Statements?

Comparative statements or comparative financial statements are statements of financial position of a business at different periods. These statements help in determining the profitability of the business by comparing financial data from two or more accounting periods. The data from two or more periods are updated side by side, this is also known as Horizontal Analysis.

Types of Comparative Statements

There are two types of comparative statements which are as follows

1. Comparative income statement
2. Comparative balance sheet

Comparative Income Statement:

Income statements provide the details about the results of the operations of the business, and comparative income statements provide the progress made by the business over a period of a few years.

The following points should be studied when analysing a comparative income statement

1. Compare the increase or decrease in sales with a relative increase in the cost of goods sold
2. Studying the operational profits of the business
3. Overall profitability of the business can be analysed by an increase or decrease in the net profit

The format of a comparative income statement is as follows:

Comparative Income Statement
for the years ended ...

Particulars	31st March, 2012 (₹)	31st March, 2013 (₹)	Absolute Change (Increase or Decrease) (₹)	Percentage Change (Increase or Decrease) (%)
I. **Revenue from Operations**	...	...	...	...
II. **Other Income**	...	...	...	...
III. **Total Revenue** (I + II)	...	...	...	...
IV. **Expenses**				
(a) Cost of Materials Consumed	...	...	...	...
(b) Purchases of Stock in trade	...	...	...	...
(c) Changes in Inventories of Finished Goods, Work-in-progress and Stock-in-trade	...	...	...	...
(d) Employees Benefit Expenses	...	...	...	...
(e) Finance Cost	...	...	...	...
(f) Depreciation and Amortisation	...	...	...	...
(g) Other Expenses	...	...	...	...
Total Expenses	...	...	...	...
V. **Profit before Tax** (III – IV)	...	...	...	...
(–) **Income Tax**	...	...	...	...
VI. **Profit after Tax**	...	...	...	...

Comparative Balance Sheet: Comparative balance sheet analyses the assets and liabilities of business for the current year and also compares the increase or decrease in them in relative as well as absolute parameters.

A comparative balance sheet not only provides the state of assets and liabilities in different time periods, but it also provides the changes that have taken place in individual assets and liabilities over different accounting periods.

Steps in preparing a comparative balance sheet

The below steps can be followed

1. Determine the absolute value of assets and liabilities related to the accounting periods.
2. Determine absolute changes in the items of the balance sheet relative to the accounting periods in question.
3. Calculate the percentage change in assets and liabilities by comparing current year values with values of previous accounting periods.

The format of a comparative balance sheet is as follows:

Comparative Balance Sheet
as at ...

Particulars	Previous Year (₹)	Current Year (₹)	Absolute Change (Increase or Decrease) (₹)	Percentage Change (Increase or Decrease) (%)
I. **EQUITY AND LIABILITIES**				
1. **Shareholders' Funds**				
(a) Share Capital				
(i) Equity Share Capital	...	...	...	...
(ii) Preference Share Capital	...	...	..	...
(b) Reserves and Surplus	...	...	...	...
2. **Non-current Liabilities**				
(a) Long-term Borrowings	...	...	...	...
(b) Long-term Provisions	...	...	...	...
3. **Current Liabilities**				
(a) Short-term Borrowings	...	...	...	...
(b) Trade Payables	...	...	...	. .
(c) Other Current Liabilities	...	...	...	...
(d) Short-term Provisions	...	...	...	...
Total	...	...	...	...
II. **ASSETS**				
1. **Non-current Assets**				
(a) Fixed Assets				
(i) Tangible Assets	...	...	...	...
(ii) Intangible Assets	...	...	...	...
(b) Non-current Investments	...	...	...	...
(c) Long-term Loans and Advances	...	...	...	...
2. **Current Assets**				
(a) Current Investments	...	...	...	...
(b) Inventories	...	...	...	...
(c) Trade Receivables	...	...	...	...
(d) Cash and Cash Equivalents	...	...	...	...
(e) Short-term Loans and Advances	...	...	...	...
(f) Other Current Assets	...	...	...	...
Total	...	...	...	...

COMMON SIZE STATEMENT ANALYSIS: The statement wherein figures reported are converted into percentage to some common base is known as common size statement. Each percentage shows the relation of the individual item to its respective total.

(i) Common-size income statement: The statement in which sales figure is assumed to be 100 and all other figures are expressed as a percentage of sales is known as common size income statement.

Format of Common Size Income Statement

Common Size Income Statement
for the years ended ...

Particulars	Absolute Amounts		Percentage of Revenue from Operation (Net Sales)	
	Previous Year (₹)	Current Year (₹)	Previous Year (%)	Current Year (%)
(1)	(2)	(3)	(4)	(5)
I. **Revenue from Operations** (Net sales)	...	...	...	...
II. **Other Income**	...	...	...	...
III. **Total Revenue** (I + II)	...	...	...	...
IV. **Expenses**				
(a) Cost of Materials Consumed	...	...	...	...
(b) Purchases of Stock-in-trade	...	...	...	...
(c) Changes in Inventories of Finished Goods, Work-in-progress and Stock-in-trade	...	...	...	...
(d) Employess Benefit Expenses	...	...	...	...
(e) Finance Cost	...	...	...	...
(f) Depreciation and Amortisation	...	...	...	...
(g) Other Expenses	...	...	...	...
Total Expenses	...	...	...	...
V. **Profit before Tax** (III – IV)	...	...	...	...
VI. (–) Income Tax	...	...	...	...
VII. **Profit after Tax**	...	...	...	...

(ii) Common-size balance sheet:

In common size balance sheet, the total of assets or liabilities is assumed to be 100 and figures are expressed as a percentage of the total.

Format of Common Size Balance Sheet

Common Size Balance Sheet
as at ...

Particulars	Absolute Amounts		Percentage of Balance Sheet Total	
	Previous Year (₹)	Current Year (₹)	Previous Year (%)	Current Year (%)
(1)	(2)	(3)	(4)	(5)
I. **EQUITY AND LIABILITIES**				
1. **Shareholders' Funds**				
(a) Share Capital	...	...	...	...
(i) Equity Share Capital	...	...	...	...
(ii) Preference Share Capital	...	...	...	...
(b) Reserves and Surplus	...	...	...	...
2. **Non-current Liabilities**				
(a) Long-term Borrowings	...	...	...	...
(b) Long-term Provisions	...	...	...	...
3. **Current Liabilities**				
(a) Short-term Borrowings	...	...	...	...
(b) Trade Payables	...	...	...	...
(c) Other Current Liabilities	...	...	...	...
(d) Short-term Provisions	...	...	...	...
Total	...	...	100	100
II. **ASSETS**				
1. **Non-current Assets**				
(a) Fixed Assets				
(i) Tangible Assets	...	...	...	...
(ii) Intangible Assets	...	...	...	...
(b) Non-current Investments	...	...	...	...
(c) Long-term Loans and Advances	...	...	...	...
2. **Current Assets**				
(a) Current Investments	...	...	...	...
(b) Inventories	...	...	...	...
(c) Trade Receivables	...	...	...	...
(d) Cash and Cash Equivalents	...	...	...	...
(e) Short-term Loans and Advances	...	...	...	...
(f) Other Current Assets	...	...	...	...
Total	...	...	100	100

FUNDS FLOW ANALYSIS: Meaning of Fund: The term funds mean cash but from the point of view of accounts and finance managers "funds" mean working capital or net working capital. In the context of funds flow statement, when we use term funds it means working capital only.

List of Current Assets: Cash in hand, cash at bank bills receivable, sundry debtors, marketable/temporary investments.

List of current liabilities: Bank overdraft, sundry creditors, bills payable, outstanding expenses dividends payable, taxes payable.

Working Capital

Working capital is difference between current assets and current liabilities.

Working capital=current assets-current liabilities

Working capital is the flesh and blood of the business. It is that portion of capital that makes a company work.

Preparation of changes in working capital in statement: The format of statement of changes in working capital with selected items of current assets and current liabilities.

Statement of changes in working capital

Current Assets	Year (Rs)	Year (Rs)	Increase in Working Capital (Rs)	Decrease in Working Capital (Rs)
Cash				
Debtors				
Stock				
Current Liabilities				
Sundry Creditors				
Bills Payable				
Working Capital				
Net Increased /Decreased				

If there is increase in the current assets when compared to the previous period, then there will be increase in working capital and accordingly we put the increased amount in increase in working capital column.

On the other hand there is decrease in the current assets when compared to the previous period; there will be reduction in the working capital. In the case of current liabilities the effect will be opposite.

The statement of changes in working capital ends with either increase or decrease in working capital. It is useful for verifying the correctness of the fund flow statement.

Problem 1:

The following is the Balance Sheet of a company as on 31st March:

Liabilities	Rs.	Assets	Rs.
Share Capital	2,00,000	Land and buildings	1,40,000
Profit & Loss Account	30,000	Plant and Machinery	3,50,000
General Reserves	40,000	Stock	2,00,000
12% Debentures	4,20,000	Sundry debtors	1,00,000
Sundry Creditors	1,00,000	Bills Receivable	10,000
Bills Payables	50,000	Cash at Bank	40,000
	8,40,000		8,40,000

Calculate:

1. Current Ratio
2. Quick Ratio
3. Inventory to Working Capital
4. Debt to Equity Ratio
5. Proprietary Ratio
6. Current Assets to fixed Assets Ratio

Solution:

1. Calculation of Current Ratio:

$$\text{Current Ratio} = \frac{\textit{Current Assets}}{\textit{Current Liabilities}}$$

From the above Balance sheet, Current assets are Stock, sundry debtors, bills receivable and cash at hand.

Current Assets = 2,00,000 + 1,00,000+10,000+40,000

=3,50,000

Current Liabilities are Sundry creditors and Bills payable

Current Liabilities = 1,00,000+50,000

= 1,50,000

$$\text{Current Ratio} = \frac{\textit{Current Assets}}{\textit{Current Liabilities}}$$

$$\text{Current Ratio} = \frac{3,50,000}{1,50,000}$$

$$= \frac{2.33}{1} = 2.33:1$$

Standard norm of current ratio is 2:1, from the above Balance sheet the firm is in comfortable position (2.33:1).

2. Calculation of Quick Ratio:

From above Balance sheet, current assets are 3,50,000 and current liabilities are 1,50,000

$$\text{Quick Ratio} = \frac{\textit{Quick Assets}}{\textit{Current Liabilities}}$$

Quick Assets = Current Assets – Stock

= 3,50,000- 2,00,000

= 1,50,000

$$\text{Quick Ratio} = \frac{\textit{Quick Assets}}{\textit{Current Liabilities}}$$

$$= \frac{1,50,000}{1,50,000} = 1:1$$

Standard norm of Quick ratio is 1:1, from the above balance sheet the firm is in comfortable position (1:1).

3. Calculation of Inventory to Working Capital Ratio:

$$\textbf{Inventory to working Capital} = \frac{\textbf{Inventory}}{\textbf{Working Capital}}$$

From the above Balance sheet inventory is stock

Inventory = 2,00,000

Working Capital = Current Assets – Current Liabilities

=3,50,000-1,50,000

=2,00,000

$$\textbf{Inventory to working Capital Ratio} = \frac{\textbf{Inventory}}{\textbf{Working Capital}}$$

$$= \frac{2,00,000}{2,00,000}$$

= 1:1

4. Calculation of Debt- Equity Ratio:

$$\text{Debt- Equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

From the above balance sheet Debt means debentures and equity means share capital, General reserves and profit and loss Account

Debt = 4,20,000

Equity= 1,00,000+ 30,000+40,000= 2,70,000

$$= \frac{4,20,000}{2,70,000}$$

=1.56:1

Standard norm of Debt-Equity Ratio is 1:1, from the above data the firm is in comfortable position (1.56:1).

5. Calculation of Proprietary Ratio:

$$\textbf{Proprietary Ratio} = \frac{\textbf{Share holders Fund}}{\textbf{Total Assets}}$$

$$= \frac{2,70,000}{8,40,000} = 0.32:1$$

Proprietary ratio is 0.32:1

6. Calculation of Current Assets to Fixed Assets Ratio

$$\text{Current Assets to Fixed assets Ratio} = \frac{\text{Current Assets}}{\text{Fixed Assets}}$$

Fixed assets = Total assets – Current Assets

= 840000- 350000= 4,90,000

$$= \frac{3,50,000}{4,90,000} = 0.71:1$$

Current asset to fixed assets is 0.71:1

Problem 2:

The following is an extract of a balance sheet of a company during the last year. Compute current ratio and quick ratio. Also interpret the ratio.

Particulars	Amount (Rs)
Land and Buildings	50,000
Plant and Machinery	1,00,000
Furniture and Fixtures	25,000
Closing stock	25,000
Sundry debtors	12,500
Wages prepaid	2,500
Sundry creditors	8,000
Rent outstanding	2,000

Solution:

From the above data, the current assets include closing stock, sundry debtors and wages prepaid. The total of the current assets is:

Current Assets = 25,000+12,500+2,500

=40,000

The current liabilities are sundry creditors and rent outstanding. The total of current liabilities is 8,000+2,000 = 10,000

1. Calculation of Current Ratio $= \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{40,000}{10,000}$ = 4:1

The standard norm of current ratio is 2:1, from the above data firm is in comfortable position i.e 4:1

2. Calculation of Quick Ratio$= \frac{\text{Quick Assets}}{\text{Current Liabilities}}$

Quick Assets = Current Assets – (Closing Stock + Wages Prepaid)

= 40,000-(25000+2,500)

= 12,500

$= \frac{12,500}{10,000}$ = 1.25:1

The standard norm of Quick ratio is 1:1, from the above data firm is in comfortable position i.e 1.25:1

Problem 3:

Following is the Balance Sheet of Raj Oil Mills Limited as at March 31, 2016

Particulars of Liabilities	Rs.	Particulars of Assets	Rs.
1. Shareholders' funds		1. Non-current Assets	
a) Share capital	7,90,000	a) Fixed assets	
b) Reserves and surplus	35,000	Tangible assets	7,53,000
2. Current Liabilities		2. Current Assets	
a) Trade Payables	72,000	a) Inventories	55,800
		b) Trade Receivables	28,800
		c) Cash and cash equivalents	59,400
Total	**8,97,000**	**Total**	**8,97,000**

Calculate Current Ratio and Quick ratio.

Solution:

Current Assets = Inventories +Trade Receivables + Cash

= 55,800 + 28,800 + 59,400 = Rs 1,44,000

Current Liabilities = Trade Payables = Rs 72,000

Current Ratio $= \frac{\text{Current Assets}}{\text{Current Liabilities}}$

$= \frac{1,44,000}{72000}$ = 2:1

The standard norm of current ratio is 2:1, from the above data firm is in comfortable position (2:1)

Quick Ratio$= \frac{\text{Quick Assets}}{\text{Current Liabilities}}$

Quick Assets = Current Assets – Inventories

= 1,44,000-55,800 =88,200

Quick Ratio= $\frac{88,200}{72,000}$ = 1.225:1

The standard norm of Quick ratio is 1:1, from the above data firm is in comfortable position (1.225:1)

Problem 4

Current Ratio is 3.5:1. Working Capital is Rs 90,000. Calculate the amount of Current Assets and Current Liabilities.

Solution:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{or, } 3.5 = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current Assets = 3.5 Current Liabilities ----------(**1**)

Working Capital = Current Assets − Current Liabilities

Working Capital = 90,000

Current Assets − Current Liabilities = 90,000----------(2)

Substitute equation---(1) in equation (2)

3.5 Current Liabilities − Current Liabilities = 90,000

2.5 Current Liabilities = 90,000

$$\text{or, Current Liabilities} = \frac{90,000}{2.5} = 36,000$$

$$\text{or, Current Assets} = 3.5 \text{ Current Liabilities}$$
$$= 3.5 \times 36,000$$
$$= 1,26,000$$

From the above data current assets are 1,26,000 and current liabilities are 36,000.

Problem 5:

Shine Limited has a current ratio 4.5:1 and quick ratio 3:1; if the inventory is 36,000, calculate current liabilities and current assets.

Solution:

Current ratio = current assets /current liabilities

4.5/1= current assets /current liabilities

4.5 Current Liabilities = Current Assets

Quick ratio= quick assets / current liabilities

3/1= quick assets / current liabilities

3 Current Liabilities = Quick Assets

Quick Assets = Current Assets − Inventory

= Current Assets − 36,000

Current Assets − Quick Assets = 36,000---------(1)

Substitute current assets and Quick assets---(1)

4.5 Current Liabilities − 3 Current Liabilities = 36,000

1.5 Current Liabilities = 36,000

Current Liabilities = 24,000

Current Assets = 4.5 Current Liabilities

= 4.5 X 24000= 1,08,000

From the given figures Current Assets is ascertained to be Rs 1,08,000 and Current Liabilities Rs 24,000.

Problem 6:

Calculate debt equity ratio from the following information:

Particulars	**Rs**
Total Assets	15,00,000
Current Liabilities	6,00,000
Total Debts	12,00,000

Solution:

$$\text{Debt Equity Ratio} = \frac{\text{Debt}}{\text{Equity}}$$

$$\begin{aligned}\text{Equity} &= \text{Total Assets} - \text{Total Debts} \\ &= 15,00,000 - 12,00,000 \\ &= 3,00,000\end{aligned}$$

Long Term Debts = Total Debts − Current Liabilities

= 12,00,000- 6,00,000= 6,00,000

$$\text{Debt Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Equity}}$$

$$\text{Debt Equity Ratio} = \frac{6,00,000}{3,00,000} = \frac{2}{1} = 2:1$$

Standard norm of debt- equity ratio is 1:1, from the above data debt-equity ratio is 2:1.

Problem 7:

Calculate Current Ratio, if inventory is Rs 6,00,000; Liquid Assets Rs 24,00,000; Quick Ratio 2:1.

Solution:

$$\text{Quick Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

$$2 = \frac{24,00,000}{\text{Current Liabilities}}$$

$$\text{Current Liabilities} = \frac{24,00,000}{2}$$
$$= 12,00,000$$

Current Assets = Liquid Assets + Inventory

$$= 24,00,000 + 6,00,000$$
$$= 30,00,000.$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$
$$= \frac{30,00,000}{12,00,000} = \frac{2.5}{1} = 2.5:1$$

Standard norm of current ratio is 2:1, from the above data current ratio is 2.5:1

Problem 8:

Compute Inventory/Stock Turnover Ratio from the following information:

Particulars	**Rs**
Net Revenue from Operations	2,00,000
Gross Profit	50,000
Inventory at the end	60,000
Excess of inventory at the end over inventory in the beginning.	20,000

Solution:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\begin{aligned}\text{Cost of Goods Sold} &= \text{Net Sales} - \text{Gross Profit}\\ &= 2{,}00{,}000 - 50{,}000\\ &= 1{,}50{,}000\end{aligned}$$

$$\begin{aligned}\text{Inventory in the beginning} &= \text{Inventory at the end} - 20{,}000\\ &= 60{,}000 - 20{,}000\\ &= 40{,}000\end{aligned}$$

$$\begin{aligned}\text{Average Inventory} &= \frac{\text{Inventory in the beginning} + \text{Inventory at the end}}{2}\\ &= \frac{40{,}000 + 60{,}000}{2}\\ &= 50{,}000\end{aligned}$$

$$\text{Inventory Turnover Ratio} = \frac{1{,}50{,}000}{50{,}000} = 3 \text{ times}$$

Problem 9:

Calculate following ratios from the following information:

(i) Current ratio (ii) Acid test ratio (iii) Operating Ratio (iv) Gross Profit Ratio

Particulars	**Rs**
Current Assets	35,000
Current Liabilities	17,500
Inventory	15,000
Operating Expenses	20,000
Revenue from Operations	60,000
Cost of Goods Sold	30,000

Solution:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current Ratio} = \frac{35,000}{17,500} = 2:1$$

Quick Ratio = Quick Assets/ Current Liabilities

Quick Assets = Current Assets- Inventories

= 35000- 15000= 20000

Quick Ratio = 20000/17500 =1.14:1

$$\text{Operating Ratio} = \frac{(\text{Cost of Goods Sold} + \text{Operating Expenses})}{\text{Net Revenue from Operations}} \times 100$$

$$= \frac{(30,000 + 20,000)}{60,000} \times 100$$

$$= \frac{50,000}{60,000} \times 100 = 83.33\%$$

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Revenue from Operations}} \times 100$$

$$\text{Gross Profit} = \text{Net Revenue from Operations} - \text{Cost of Goods Sold}$$

$$= 60,000 - 30,000$$

$$= 30,000$$

$$\text{Gross Profit Ratio} = \frac{30,000}{60,000} \times 100 = 50\%$$

Problem 10:
From the following information calculate:

(i) Gross Profit Ratio (ii) Inventory Turnover Ratio (iii) Current Ratio (iv) Liquid Ratio (v) Net Profit Ratio (vi) Working capital Ratio:

Particulars	**Rs**
Revenue from Operations	25,20,000
Net Profit	3,60,000
Cast of Revenue from Operations	19,20,000
Long-term Debts	9,00,000
Trade Payables	2,00,000
Average Inventory	8,00,000
Current Assets	7,60,000
Fixed Assets	14,40,000
Current Liabilities	6,00,000

Net Profit before Interest and Tax	8,00,000

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Revenue from Operations}} \times 100$$

$$\begin{aligned}\text{Gross Profit} &= \text{Net Revenue from Operations} - \text{Cost of Revenue from Operations} \\ &= 25,20,000 - 19,20,000 \\ &= 6,00,000\end{aligned}$$

$$\text{Gross Profit Ratio} = \frac{6,00,000}{25,20,000} \times 100 = 23.81$$

$$\begin{aligned}\text{Inventory Turnover Ratio} &= \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}} \\ &= \frac{19,20,000}{8,00,000} \\ &= 2.4 \text{ times}\end{aligned}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned}\text{Current Assets} &= \text{Liquid Assets} + \text{Inventory} \\ &= 7,60,000 + 8,00,000 \\ &= 15,60,000\end{aligned}$$

Current ratio = 15,60,000/6,00,000=2.6:1

Current ratio is 2.6:1

$$\begin{aligned}\text{Liquid Ratio} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} \\ &= \frac{7,60,000}{6,00,000} \\ &= \frac{1.27}{1} \\ &= 1.27:1\end{aligned}$$

$$\begin{aligned}\text{Net Profit Ratio} &= \frac{\text{Net Profit}}{\text{Net Revenue from Operations}} \times 100 \\ &= \frac{3,60,000}{25,20,000} \times 100 \\ &= 14.28\%\end{aligned}$$

$$\text{Working Capital Ratio} = \frac{\text{Revenue from Operations}}{\text{Working Capital}}$$

$$\begin{aligned}\text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities}\\ &= 15,60,000 - 6,00,000\\ &= 9,60,000\end{aligned}$$

$$\begin{aligned}\text{Working Capital Ratio} &= \frac{25,20,000}{9,60,000}\\ &= 2.625 \text{ times}\end{aligned}$$

Problem 11

Given that current market price of a share Rs. 300; face value of the share is Rs. 100; percentage of dividend declared is 20 percent, then calculate dividend yield.

Solution:

Dividend yield Ratio = (Nominal or face value of the share/cost or market price of the share) X % dividend per annum

Give that face value of the share is 100

Market price of the share is 300

= (100/300) X 20 = 6.66 per annum

Problem 12

Given that market price of a share is Rs.340 and EPS is 10, calculate P/E ratio.

Solution:

Given that market price is Rs.340

EPS is 10

Price/ Earing Ratio= (Market price per share/ Earning per share)

= 340/10

= 34