



## BEFA All Units Notes with Imp

Computer Science and Engineering (Jawaharlal Nehru Technological University,  
Hyderabad)

## BEFA IMPORTANT QUESTION

Sl.No	LONG QUESTIONS	Page No.	
			UNIT I
1	Explain about features, advantages and disadvantages of limited liability company.	17	Very Imp.
2	Explain the features, advantages and disadvantage of partnership.	10	
3	Explain different sources of raising capital for a company	21	
4	Explain inflation and its types.	35	Very Imp.
5	Explain business cycle, its characteristics and phases.	38	Very Imp.
6	Explain the role of business economist.	46	
7	What is national income?. Explain its concepts.	29	Very Imp.
8	What is company?. Explain its features, advantages and disadvantages.	14	
9	Define business economics and explain its nature and scope of business economics.	41	Very Imp.
10	Explain the multi-disciplinary nature of business economics.	47	Very Imp.
11	Explain theory of firm.	4	Very Imp.
	UNIT II		
1	Explain the types of elasticity of demand.	54	Very Imp.
2	Explain demand forecasting methods.	67	Very Imp.
3	Explain significance of elasticity of demand.	63	
4	Explain the factors affecting elasticity of demand.	62	
5	What is law of demand?. Explain the exceptions to law of demand.	49	Very Imp.
6	What is law of supply?. Explain its determinants.	71	Very Imp.
7	What is demand?. Explain its determinants.	51	
	UNIT III		
1	Explain Cobb-Douglas production function.	83	Very Imp.
2	Explain the production function with two variable input.	80	Very Imp.
3	Explain the law of returns to scale.	81	Very Imp.
4	Explain the production function with one input variable?.	79	Very Imp.
5	What is a Monopoly?. Explain its features and price-output determination in Monopoly.	95	Very Imp.
6	Explain price-output determination in perfect competition.	93	Very Imp.
7	Explain features and price-output determination in monopolistic completion	97	Very Imp.
8	Break - Even Analysis problem.	106	
9	Explain different methods of pricing.	100	
10	Explain the feature of Oligopoly.	99	Very Imp.
11	Explain the product life cycle based pricing	102	Very Imp.
	UNIT IV		
1	Explain accounting concepts.	122	Very Imp.
2	Explain debit and credit principles.	126	
3	Journal entries	130	
4	Trial Balance problem	142	Very Imp.
5	Final accounts problem	149	Very Imp.
6	What is financial accounting?. Explain the advantages of financial accounting?.	115 120	
7	Explain the functions of accountant.	118	
	UNIT V		
1	What is a ratio?. Explain about different accounting ratios.	156	

<b>2</b>	Ratios problem	<b>157</b>	<b>Very Imp.</b>
<b>3</b>	Funds Flow problem	<b>180</b>	<b>Very Imp.</b>
<b>4</b>	Cash Flow problem	<b>192</b>	<b>Very Imp.</b>
<b>5</b>	Explain the differences between funds flow statement and cash flow statement.	<b>200</b>	

Sl.No	<b>SHORT QUESTIONS</b>	<b>Page No.</b>	
			<b>UNIT I</b>
<b>1</b>	Define business	<b>1</b>	
<b>2</b>	Sole Proprietorship	<b>7</b>	
<b>3</b>	Partnership firm	<b>10</b>	
<b>4</b>	Partnership deed	<b>11</b>	
<b>5</b>	Limited Liability Company	<b>17</b>	
<b>6</b>	Partner by estoppel	<b>12</b>	
<b>7</b>	Partner by holding out	<b>12</b>	
<b>8</b>	Debentures	<b>22</b>	
<b>9</b>	Short term loans	<b>24</b>	
<b>10</b>	Venture capital	<b>24</b>	
<b>11</b>	National income	<b>29</b>	
<b>12</b>	Gross Domestic Product (GDP)	<b>31</b>	
<b>13</b>	Inflation	<b>35</b>	
<b>14</b>	Stagflation	<b>36</b>	
<b>15</b>	Deflation	<b>37</b>	
<b>16</b>	Business Cycles	<b>38</b>	
<b>17</b>	Define business economics	<b>41</b>	
<b>18</b>	Normative economics	<b>42</b>	
	<b>UNIT II</b>		
<b>1</b>	Demand analysis	<b>49</b>	
<b>2</b>	Law of demand and exceptions	<b>49</b>	
<b>3</b>	Exceptions to law of demand	<b>50</b>	
<b>4</b>	Giffen goods	<b>50</b>	
<b>5</b>	Define point elasticity of demand	<b>60</b>	
<b>6</b>	Define demand forecasting and draw its chart	<b>67</b>	
	<b>UNIT III</b>		
<b>1</b>	Law of returns to scale	<b>81</b>	
<b>2</b>	Cost concepts	<b>87</b>	
<b>3</b>	Contribution, BEP, M/S, P/V Ratio	<b>104</b>	
<b>4</b>	Isoquants	<b>80</b>	
<b>5</b>	Opportunity cost	<b>87</b>	
<b>6</b>	Production Function	<b>78</b>	
<b>7</b>	What is market	<b>92</b>	
<b>8</b>	Monopolistic competition	<b>97</b>	
<b>9</b>	Duopoly		
<b>10</b>	Oligopoly	<b>99</b>	
<b>11</b>	Monopoly	<b>95</b>	
	<b>UNIT IV</b>		
<b>1</b>	Book keeping and accounting	<b>115</b>	
<b>2</b>	Double entry book - keeping	<b>117</b>	
<b>3</b>	Journal	<b>130</b>	
<b>4</b>	Ledger	<b>137</b>	
<b>5</b>	Trial balance	<b>140</b>	
<b>6</b>	Debit and Credit Rules	<b>126</b>	
<b>7</b>	Accounting cycle	<b>155</b>	
<b>8</b>	Accounting equation	<b>127</b>	
	<b>UNIT V</b>		
<b>1</b>	Liquid Ratio/Quick Ratio	<b>157</b>	
<b>2</b>	Concept of ratio analysis	<b>156</b>	
<b>3</b>	What is fund and fund flow	<b>175</b>	
<b>4</b>	Working capital	<b>176</b>	
<b>5</b>	Current assets	<b>124</b>	
<b>6</b>	Advantages of cash flow statement	<b>194</b>	
<b>7</b>	Advantages of funds flow statement	<b>190</b>	

## **BEFA UNIT I**

# **B U S I N E S S**

### **INTRODUCTION**

Human beings are continuously engaged in some activity or other in order to satisfy their unlimited wants. Every day we come across the word 'business' or 'businessman' directly or indirectly. Business has become essential part of modern world.

Business is an economic activity, which is related with continuous and regular production and distribution of goods and services for satisfying human wants.

All of us need food, clothing and shelter. We also have many other household requirements to be satisfied in our daily lives. We met these requirements from the shopkeeper. The shopkeeper gets from wholesaler. The wholesaler gets from manufacturers. The shopkeeper, the wholesaler, the manufacturer are doing business and therefore they are called as Businessman.

### **DEFINITIONS**

**Stephenson** defines business as, "The regular production or purchase and sale of goods undertaken with an objective of earning profit and acquiring wealth through the satisfaction of human wants."

**Dicksee** defines business as "a form of activity conducted with an objective of earning profits for the benefit of those on whose behalf the activity is conducted."

**Lewis Henry** defines business as, "Human activity directed towards producing or acquiring wealth through buying and selling of goods."

Thus, the term business means continuous production and distribution of goods and services with the aim of earning profits under uncertain market conditions.

### **CHARACTERISTICS**

#### **1. Exchange of goods and services**

## **BEFA UNIT I**

All business activities are directly or indirectly concerned with the exchange of goods or services for money or money's worth.

### **2. Deals in numerous transactions**

In business, the exchange of goods and services is a regular feature. A businessman regularly deals in a number of transactions and not just one or two transactions.

### **3. Profit is the main Objective**

The business is carried on with the intention of earning a profit. The profit is a reward for the services of a businessman.

### **4. Business skills for economic success**

Anyone cannot run a business. To be a good businessman, one needs to have good business qualities and skills. A businessman needs experience and skill to run a business.

### **5. Risks and Uncertainties**

Business is subject to risks and uncertainties. Some risks, such as risks of loss due to fire and theft can be insured. There are also uncertainties, such as loss due to change in demand or fall in price cannot be insured and must be borne by the businessman.

### **6. Buyer and Seller**

Every business transaction has minimum two parties that is a buyer and a seller. Business is nothing but a contract or an agreement between buyer and seller.

### **7. Connected with production**

Business activity may be connected with production of goods or services. In this case, it is called as industrial activity. The industry may be primary or secondary.

### **8. Marketing and Distribution of goods**

## **BEFA UNIT I**

Business activity may be concerned with marketing or distribution of goods in which case it is called as commercial activity.

### **9. Deals in goods and services**

In business there has to be dealings in goods and service.

Goods may be divided into following two categories :-

1. **Consumer goods** : Goods which are used by final consumer for consumption are called consumer goods e.g. T.V., Soaps, etc.
2. **Producer goods** : Goods used by producer for further production are called producers goods e.g. Machinery, equipments, etc. Services are intangible but can be exchanged for value like providing transport, warehousing and insurance services, etc.

### **10. To Satisfy human wants**

The businessman also desires to satisfy human wants through conduct of business. By producing and supplying various commodities, businessmen try to promote consumer's satisfaction.

### **11. Social obligations**

Modern business is service oriented. Modern businessmen are conscious of their social responsibility. Today's business is service-oriented rather than profit-oriented.

## **STRUCTURE OF BUSINESS FIRM**

A business firm is an organization that uses resources to produce goods and services that are sold to consumers, other firms, or the government. Most businesses exist because a group of people working together can be more effective than a group of people working individually.

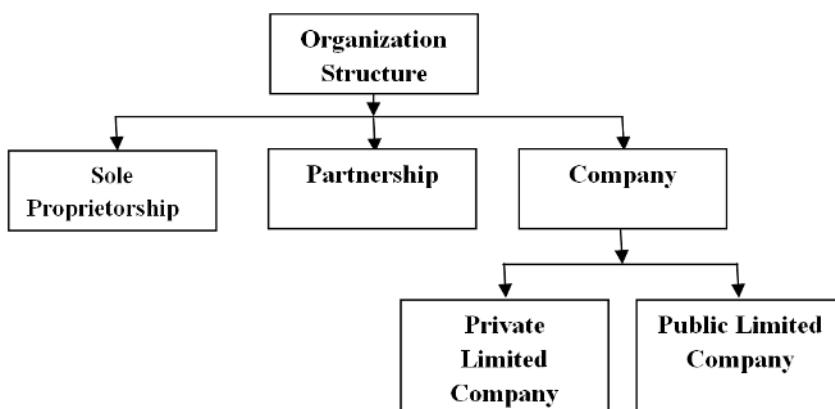
Firms are grouped into three types: sole proprietorships, partnerships, and companies.

## **BEFA UNIT I**

A sole proprietorship is a business that is owned by one individual. This owner makes all the business decisions, receives all the profits or losses of the firm, and is legally responsible for the debts of the firm.

A type of business organization in which two or more individuals pool money, skills, and other resources, and share profit and loss in accordance with terms of the partnership agreement. In absence of such agreement, a partnership is assumed to exist where the participants in an enterprise agree to share the associated risks and rewards proportionately.

A company is a legal entity, allowed by legislation, which permits a group of people, as shareholders, to apply to the government for an independent organization to be created, which can then focus on pursuing set objectives, and empowered with legal rights which are usually only reserved for individuals, such as to sue and be sued, own property, hire employees or loan and borrow money.



## **THEORY OF FIRM**

The following are the various theories of the firm.

### **1. Profit Maximization Theory**

Profit maximization is one of the most common and widely accepted objectives of a firm. According to the profit maximization theory, the main aim of the firm is to produce large amount of profits. Profit is considered as the internal source of funds and the market value of the firm also rely mainly on the profits earned by the firm. in order to survive in the market, it is very essential for the firms to earn profits. Profits are obtained by deducting total revenue from the total cost i.e.,

## **BEFA UNIT I**

Profit = Total revenue – total cost

### **2. Baumol's Theory of Sales Revenue Maximization**

According to Baumol, maximization of sales revenue is the main objective of the firms in the competitive markets. It's based on the theory that, once a company has reached an acceptable level of profit for a good or service, the aim should shift away from increasing profit to focus on increasing revenue from sales. According to the theory, companies should do so by producing more, keeping prices low, and investing in advertising to increase product demand. The idea is that applying this sales revenue maximization model will improve the overall reputation of the company and, in turn, lead to higher long-term profits.

He found that sales volumes helps in finding out the market leadership in competition. According to him, in large organization, the salary and other benefits of the managers are connected with the sales volumes instead of profits. Banks give loans to firms with more sales. So, managers try to maximize the total revenue of the firms. The volume of sales represents the position of the firm in the market. The managers' performance is measured on the basis of the attainment of sales and maintain minimum profit. Thus, the main aim of the firm is to maximize sales revenue and maintain minimum profits for satisfying shareholders.

### **3. Marris theory of Growth Maximization**

According to Marris, owners/shareholders strive for attaining profits and market share and mangers strive for better salary, job security and growth. These two objectives can be attained by maximizing the balanced growth of the firm. The balanced growth of the firm relies mainly on the growth rate of demand for the firm's products and growth rate of capital supplied to the firm. if the demand for the firm's product and the capital supplied to the firm grows at the same rate then the growth rate of the firm will be considered as balanced.

Marris found that the firms faces two difficulties while attaining the objectives of maximization of balanced growth which are managerial difficulties and financial difficulties. For maximizing the growth of the firm the managers should have skills, expertise, efficiency and sincerity in them. The prudent financial policy of the firm depends on at least three financial ratios which restricts the growth of the firm. 1. Debt-Equity Ratio 2. Liquidity Ratio, 3. Retention Ratio.

### **4. Williamson's Model of Managerial Utility Functions**

Williamson's model combined profits maximization and growth maximization objectives. According to the model of managerial utility functions, managers

## **BEFA UNIT I**

makes use of their discretionary powers for maximizing their own utility function and maintains minimum profits for satisfying shareholders.

- Minimum profits for minimum investment and growth of the firm.
- Managers want to maximize their own utility (satisfaction).
- Satisfaction or utility of managers depends on three variables.
  1. Staff salaries, S: Includes management salaries, administration expenses, selling expenditure. More the staff exp. more sales. Power and prestige of managers increases with S.
  2. Management emoluments, M: i.e., luxury offices, fancy cars. Perks.
  3. Discretionary investments, D: Amount spent at his own discretion, e.g. on latest equipment, furniture, decoration material etc. to satisfy ego and give them a sense of pride. These give a boost to the manager's esteem and status in the organization.
- Managers use that combination of above variables that maximizes their own satisfaction.

The Williamson's model is written as,

$$UM = f(S, M, D)$$

Where, UM = Utility of Manager, S = Salaries, M = Managerial emoluments, D = Discretionary power for investments.

The utility function of the managers rely on salary of the managers, job security, power, status, professional satisfaction and power to affect the objectives of the firm.

### **5. Behavioral Theories**

According to the behavioral theories, the firm tries to attain a satisfactory behaviour instead of maximization. There are two important behavioral models, 1. Simon's satisfying model and 2. model developed by Cyest and March.

The Simon's satisfying model states that firms carry out their operations under 'bounded rationality' and can only attain a satisfactory level of profit, sales and growth. Simon carried out a research and found that modern business does not have adequate information and is uncertain about future due to which it is very difficult to attain profit, sales and growth objectives.

The model developed by Cyest and March states that firms should be oriented towards multi-goal and multi-decisions making. Instead of dealing with uncertainty and inadequate information, the firms should fulfil the conflicting goals of various stakeholders (such as shareholders, employees, customers, financiers, government and other social interest groups).

## **BEFA UNIT I**

### **TYPES OF BUSINESS ENTITIES**

#### **I. Sole Proprietorship**

The sole trader is the simplest, oldest and natural form of business organization. It is also called sole proprietorship. 'Sole' means one. 'Sole trader' implies that there is only one trader who is the owner of the business.

It is a one-man form of organization wherein the trader assumes all the risk of ownership carrying out the business with his own capital, skill and intelligence. He is the boss for himself. He has total operational freedom. He is the owner, Manager and controller. He has total freedom and flexibility. Full control lies with him. He can take his own decisions. He can choose or drop a particular product or business based on its merits. He need not discuss this with anybody. He is responsible for himself. This form of organization is popular all over the world. Ex: Restaurants, Supermarkets, pan shops, medical shops, hosiery shops etc.

#### **Features**

- It is easy to start a business under this form and also easy to close.
- He introduces his own capital. Sometimes, he may borrow, if necessary
- He enjoys all the profits and in case of loss, he lone suffers.
- He has unlimited liability which implies that his liability extends to his personal properties in case of loss.
- He has a high degree of flexibility to shift from one business to the other.
- Business secrets can be guarded well
- There is no continuity. The business comes to a close with the death, illness or insanity of the sole trader. Unless, the legal heirs show interest to continue the business, the business cannot be restored.
- He has total operational freedom. He is the owner, manager and controller.
- He can be directly in touch with the customers.

## **BEFA UNIT I**

- He can take decisions very fast and implement them promptly.
- Rates of tax, for example, income tax and so on are comparatively very low.

### **Advantages**

1. **Easy to start and easy to close:** Formation of a sole trader form of organization is relatively easy even closing the business is easy.
2. **Personal contact with customers directly:** Based on the tastes and preferences of the customers the stocks can be maintained.
3. **Prompt decision-making:** To improve the quality of services to the customers, he can take any decision and implement the same promptly. He is the boss and he is responsible for his business Decisions relating to growth or expansion can be made promptly.
4. **High degree of flexibility:** Based on the profitability, the trader can decide to continue or change the business, if need be.
5. **Secrecy:** Business secrets can well be maintained because there is only one trader.
6. **Low rate of taxation:** The rate of income tax for sole traders is relatively very low.
7. **Direct motivation:** If there are profits, all the profits belong to the trader himself. In other words. If he works more hard, he will get more profits. This is the direct motivating factor. At the same time, if he does not take active interest, he may stand to lose badly also.
8. **Total Control:** The ownership, management and control are in the hands of the sole trader and hence it is easy to maintain the hold on business.
9. **Minimum interference from government:** Except in matters relating to public interest, government does not interfere in the business matters of the sole trader. The sole trader is free to fix price for his products/services if he enjoys monopoly market.

## **BEFA UNIT I**

10. **Transferability:** The legal heirs of the sole trader may take the possession of the business.

### **Disadvantages**

1. **Unlimited liability:** The liability of the sole trader is unlimited. It means that the sole trader has to bring his personal property to clear off the loans of his business. From the legal point of view, he is not different from his business.
2. **Limited amounts of capital:** The resources a sole trader can mobilize cannot be very large and hence this naturally sets a limit for the scale of operations.
3. **No division of labour:** All the work related to different functions such as marketing, production, finance, labour and so on has to be taken care of by the sole trader himself. There is nobody else to take his burden. Family members and relatives cannot show as much interest as the trader takes.
4. **Uncertainty:** There is no continuity in the duration of the business. On the death, insanity or insolvency the business may come to an end.
5. **Inadequate for growth and expansion:** This form is suitable for only small size, one-man-show type of organizations. This may not really work out for growing and expanding organizations.
6. **Lack of specialization:** The services of specialists such as accountants, market researchers, consultants and so on, are not within the reach of most of the sole traders.
7. **More competition:** Because it is easy to set up a small business, there is a high degree of competition among the small businessmen and a few who are good in taking care of customer requirements along can service.
8. **Low bargaining power:** The sole trader is the in the receiving end in terms of loans or supply of raw materials. He may have to compromise many times regarding the terms and conditions of purchase of materials or borrowing loans from the finance houses or banks.

## **BEFA UNIT I**

### **II. Partnership**

Partnership is an improved form of sole trader in certain respects. Where there are like-minded persons with resources, they can come together to do the business and share the profits/losses of the business in an agreed ratio. Persons who have entered into such an agreement are individually called 'partners' and collectively called 'firm'. The relationship among partners is called a partnership.

Indian Partnership Act, 1932 defines partnership as the relationship between two or more persons who agree to share the profits of the business carried on by all or any one of them acting for all.

#### **Features**

1. **Relationship:** Partnership is a relationship among persons. It is relationship resulting out of an agreement.
2. **Two or more persons:** There should be two or more number of persons.
3. **There should be a business:** Business should be conducted.
4. **Agreement:** Persons should agree to share the profits/losses of the business
5. **Carried on by all or any one of them acting for all:** The business can be carried on by all or any one of the persons acting for all. This means that the business can be carried on by one person who is the agent for all other persons. Every partner is both an agent and a principal.
6. **Unlimited liability:** The liability of the partners is unlimited. The partnership and partners, in the eye of law, are not different but one and the same. Hence, the partners have to bring their personal assets to clear the losses of the firm, if any.
7. **Number of partners:** According to the Indian Partnership Act, the minimum number of partners should be two and the maximum number is restricted, as given below:
  - 10 partners in case of banking business

## **BEFA UNIT I**

- 20 in case of non-banking business
8. **Division of labour:** Because there are more than two persons, the work can be divided among the partners based on their aptitude.
  9. **Personal contact with customers:** The partners can continuously be in touch with the customers to monitor their requirements.
  10. **Flexibility:** All the partners are likeminded persons and hence they can take any decision relating to business.

### **Partnership Deed**

The written agreement among the partners is called 'the partnership deed'. It contains the terms and conditions governing the working of partnership. The following are contents of the partnership deed.

1. Names and addresses of the firm and partners
2. Nature of the business proposed
3. Duration
4. Amount of capital of the partnership and the ratio for contribution by each of the partners.
5. Their profit sharing ratio (this is used for sharing losses also)
6. Rate of interest charged on capital contributed, loans taken from the partnership and the amounts drawn, if any, by the partners from their respective capital balances.
7. The amount of salary or commission payable to any partner
8. Procedure to value good will of the firm at the time of admission of a new partner, retirement or death of a partner
9. Allocation of responsibilities of the partners in the firm
10. Procedure for dissolution of the firm

## **BEFA UNIT I**

11. Name of the arbitrator to whom the disputes, if any, can be referred to for settlement.

12. Special rights, obligations and liabilities of partners(s), if any.

### **Kind Of Partners:**

1. **Active Partner:** Active partner takes active part in the affairs of the partnership. He is also called working partner.
2. **Sleeping Partner:** Sleeping partner contributes to capital but does not take part in the affairs of the partnership.
3. **Nominal Partner:** Nominal partner is partner just for namesake. He neither contributes to capital nor takes part in the affairs of business. Normally, the nominal partners are those who have good business connections, and are well placed in the society.
4. **Partner by Estoppels:** Estoppels means behavior or conduct. Partner by estoppels gives an impression to outsiders that he is the partner in the firm. In fact he neither contributes to capital, nor takes any role in the affairs of the partnership.
5. **Partner by holding out:** If partners declare a particular person (having social status) as partner and this person does not contradict even after he comes to know such declaration, he is called a partner by holding out and he is liable for the claims of third parties. However, the third parties should prove they entered into contract with the firm in the belief that he is the partner of the firm. Such a person is called partner by holding out.
6. **Minor Partner:** Minor has a special status in the partnership. A minor can be admitted for the benefits of the firm. A minor is entitled to his share of profits of the firm. The liability of a minor partner is limited to the extent of his contribution of the capital of the firm.

### **Advantages**

1. **Easy to form:** Once there is a group of like-minded persons and good business proposal, it is easy to start and register a partnership.

## **BEFA UNIT I**

2. **Availability of larger amount of capital:** More amount of capital can be raised from more number of partners.
3. **Division of labour:** The different partners come with varied backgrounds and skills. This facilities division of labour.
4. **Flexibility:** The partners are free to change their decisions, add or drop a particular product or start a new business or close the present one and so on.
5. **Personal contact with customers:** There is scope to keep close monitoring with customers requirements by keeping one of the partners in charge of sales and marketing. Necessary changes can be initiated based on the merits of the proposals from the customers.
6. **Quick decisions and prompt action:** If there is consensus among partners, it is enough to implement any decision and initiate prompt action. Sometimes, it may take more time for the partners on strategic issues to reach consensus.
7. **The positive impact of unlimited liability:** Every partner is always alert about his impending danger of unlimited liability. Hence he tries to do his best to bring profits for the partnership firm by making good use of all his contacts.

### **Disadvantages:**

1. **Formation of partnership is difficult:** Only like-minded persons can start a partnership. It is sarcastically said, 'it is easy to find a life partner, but not a business partner'.
2. **Liability:** The partners have joint and several liabilities beside unlimited liability. Joint and several liability puts additional burden on the partners, which means that even the personal properties of the partner or partners can be attached. Even when all but one partner become insolvent, the solvent partner has to bear the entire burden of business loss.
3. **Lack of harmony or cohesiveness:** It is likely that partners may not, most often work as a group with cohesiveness. This results in mutual

## **BEFA UNIT I**

conflicts. Lack of harmony results in delay in decisions and paralyses the entire operations.

4. **Limited growth:** The resources when compared to sole trader, a partnership may raise little more. But when compare to the other forms such as a company, resources raised in this form of organization are limited. Added to this, there is a restriction on the maximum number of partners.
5. **Instability:** The partnership form is known for its instability. The firm may be dissolved on death, insolvency or insanity of any of the partners.
6. **Lack of Public confidence:** Public and even the financial institutions look at the unregistered firm with a suspicious eye. Though registration of the firm under the Indian Partnership Act is a solution of such problem, this cannot revive public confidence into this form of organization overnight. The partnership can create confidence in other only with their performance.

### **III. Joint Stock Company**

The joint stock company emerges from the limitations of partnership such as joint and several liability, unlimited liability, limited resources and uncertain duration and so on. Normally, to take part in a business, it may need large money and we cannot foretell the fate of business. It is not literally possible to get into business with little money. Against this background, it is interesting to study the functioning of a joint stock company. The main principle of the joint stock company from is to provide opportunity to take part in business with a low investment as possible say Rs.1000. Joint Stock Company has been a boon for investors with moderate funds to invest.

#### **Company Defined**

Lord justice Lindley explained the concept of the joint stock company from of organization as '**an association of many persons who contribute money or money's worth to a common stock and employ it for a common purpose**'.

## **BEFA UNIT I**

### **Features**

1. **Artificial person:** The Company has no form or shape. It is an artificial person created by law. It is intangible, invisible and existing only, in the eyes of law.
2. **Separate legal existence:** it has an independence existence, it separate from its members. It can acquire the assets. It can borrow for the company. It can sue other if they are in default in payment of dues, breach of contract with it, if any. Similarly, outsiders for any claim can sue it.
3. **Voluntary association of persons:** The Company is an association of voluntary association of persons who want to carry on business for profit. To carry on business, they need capital. So they invest in the share capital of the company.
4. **Limited Liability:** The shareholders have limited liability i.e., liability limited to the face value of the shares held by him.
5. **Capital is divided into shares:** The total capital is divided into a certain number of units. Each unit is called a share.
6. **Transferability of shares:** In the company form of organization, the shares can be transferred from one person to the other. A shareholder of a public company can sell his holding of shares at his will. However, the shares of a private company cannot be transferred.
7. **Common Seal:** As the company is an artificial person created by law has no physical form, it cannot sign its name on a paper; so, it has a common seal on which its name is engraved. The common seal should affix every document or contract.
8. **Perpetual succession:** 'Members may come and members may go, but the company continues for ever.'
9. **Ownership and Management separated:** The shareholders are spread over the length and breadth of the country, and sometimes, they are from different parts of the world. To facilitate administration, the shareholders

## **BEFA UNIT I**

elect some among themselves directors to a Board, which looks after the management of the business. The Board recruits the managers and employees at different levels in the management. Thus the management is separated from the owners.

10. **Winding up:** Winding up refers to the putting an end to the company. Because law creates it, only law can put an end to it. The company is not affected by the death or insolvency of any of its members.

11. **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 and they should be careful about the liability aspect of their transactions with the company.

### **Advantages**

1. **Mobilization of larger resources:** A joint stock company provides opportunity for the investors to invest, even small sums, in the capital of large companies. The facilities rising of larger resources.
2. **Separate legal entity:** The Company has separate legal entity. It is registered under Indian Companies Act, 1956.
3. **Limited liability:** The shareholder has limited liability in respect of the shares held by him. In no case, does his liability exceed more than the face value of the shares allotted to him.
4. **Transferability of shares:** The shares can be transferred to others. However, the private company shares cannot be transferred.
5. **Liquidity of investments:** By providing the transferability of shares, shares can be converted into cash.
6. **Inculcates the habit of savings and investments:** Because the share face value is very low, this promotes the habit of saving among the common man and mobilizes the same towards investments in the company.

## **BEFA UNIT I**

7. **Democracy in management:** the shareholders elect the directors in a democratic way in the general body meetings.
8. **Continued existence:** The Company has perpetual succession. It has no natural end. It continues forever and ever unless law put an end to it.
9. **Growth and Expansion:** With large resources and professional management, the company can earn good returns on its operations, build good amount of reserves and further consider the proposals for growth and expansion.

### **Disadvantages**

1. **Formation of company is a long drawn procedure:** Promoting a joint stock company involves a long drawn procedure. It is expensive and involves large number of legal formalities.
2. **High 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, and any violation of these rules results into statutory lapses, punishable under the companies act.
3. **Inordinate delays in decision-making:** As the size of the organization grows, the number of levels in organization also increases in the name of specialization. The more the number of levels, the more is the delay in decision-making.
4. **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, the opportunities once missed do not recur and the company loses the revenue.
5. **Lack of responsibility and commitment:** In some cases, the managers at different levels are afraid to take risk and more worried about their jobs rather than the huge funds invested in the capital of the company lose the revenue.

### **IV. Limited Liability Company (LLC)**

## **BEFA UNIT I**

Limited Liability Company is another category of company registered under the Indian New Companies Act, 2013. There are number of companies available in India including private limited and public limited ones but Limited Liability Company is a brand new one in the line. It's often called as a Limited Liability Corporation and its nature of business is quite similar with partnership firm and sole trade business. Company is an association of persons or an artificial person formed under the Indian Companies act in order to carry out a certain business. Under the Limited Liability Company Act, liability is limited among members or partners.

New Companies Act, 2013 has defined all rules and regulations regarding incorporating and registering all limited liability companies. One should apply to the Registrar of Companies (ROC) by giving all the details regarding company including name of the company, name and address of board of directors, location of the company as per the company registration services. An LLC cannot issue stocks. Since no stock is issued to the members of an LLC, the entity is taxed as a pass-through entity. Each member of the LLC reports his share of the entity's profits on his personal income statement in the form of income, but the corporate entity itself incurs no taxes.

A private company whose owners are legally responsible for its debts only to the extent of the amount of capital they invested. A Limited Liability Company, also known as an LLC, is a type of business structure that combines traits of both a sole-proprietorship and a company. An LLC is eligible for the pass-through taxation feature of a partnership or sole proprietorship, while at the same time limiting the liability of the owners, similar to a company. As the LLC is considered a separate entity, the company does not pay taxes or take on losses. Instead, this is done by the owners as they have to report the business profits, or losses, on their personal income tax returns. However, just like company, members of an LLC are protected from personal liabilities, thus the name Limited Liability.

A limited liability company is an U.S. form of privately owned company that combines the limited liability of a company with the simplified taxation of a sole proprietorship or partnership. Owners of a limited liability company, referred to

## **BEFA UNIT I**

as an "LLC," report the company's profits and losses on their personal income tax returns, rather than preparing separate corporate tax returns. This is known as "pass-through taxation." LLC owners are referred to as "members," and the company may be owned by a single individual, two or more individuals, or by a company or another LLC.

### **Features**

1. **Limited liability:** As the name implies, members' liabilities for the debts and obligations of the LLC are limited to their own investment.
2. **Pass-through taxation:** For taxation purposes, income from your business can be treated as your own personal income, and is therefore not subject to certain corporate taxes for which companies are liable.
3. **Separate Legal Entity:** A LLC is a legal entity and a juristic person established under the Act. Therefore, a LLC has wide legal capacity and can own property and also incur debts.
4. **Uninterrupted Existence:** A LLC has 'perpetual succession', that is continued or uninterrupted existence until it is legally dissolved. A LLC being a separate legal person, is unaffected by the death or other departure of any Partner. Hence, a LLC continues to be in existence irrespective of the changes in ownership.
5. **Audit not Required:** An LLC does not require audit if it has less than Rs. 40 lakhs of turnover and less than Rs.25 lakhs of capital contribution. Therefore, LLCs are ideal for start-ups and small businesses that are just starting their operations and want to have minimal regulatory compliance related formalities.
6. **Easy Transferability:** The ownership of a LLC can be easily transferred to another person by inducting them as a Partner of the LLC. LLC is a separate legal entity separate from its Partners, so by changing the Partners, the ownership of the LLC can be changed.

## **BEFA UNIT I**

7. **Owning Property:** A LLP being an artificial judicial person, can acquire, own, enjoy and sell, property in its name. No Partner can make any claim upon the property of the LLC - so long as the LLC is a going concern.

### **Advantages**

1. **Limited liability:** As the name implies, members' liabilities for the debts and obligations of the LLC are limited to their own investment.
2. **Pass-through taxation:** For taxation purposes, income from your business can be treated as your own personal income, and is therefore not subject to certain corporate taxes for which companies are liable.
3. **Limitless ownership:** Some legal structures limit the number of people allowed to file as owners. With an LLC, there is no limit to the number of owners. An LLC can have one member or hundreds of members.
4. **Allocation flexibility:** In an LLC, the amount of money that owners invest into the business doesn't need to equal their percentage of ownership. When an LLC is formed, members create an operating agreement, in which different percentages of company profits and losses can be assigned to owners regardless of the amounts of their initial investments.
5. **Freedom in management:** Unlike standard companies, LLCs are not required to have a board of directors, annual meetings, or strict books requirements. This can free up a lot of time and stress to let you run your business on your own terms. As you can imagine, this can be an important advantage of a limited liability company as well.

### **Disadvantages**

1. **Building capital:** Unlike companies, which can issue stock in order to increase funds for their companies, LLCs have to work a little harder to find investors and sources of capital due to the greater legal obligations to add a new member to an LLC. If you have a fast growth internet company that needs venture capital to scale, this limitation is one of the major disadvantages of a limited liability company.

## **BEFA UNIT I**

2. **Higher fees:** LLCs must typically pay more fees to file as LLCs compared to some other business entities or sole proprietorships.
3. **Government regulation:** Because of the protections afforded to LLCs, some types of businesses are ineligible to file as LLCs. Banks, insurance companies, and medical service companies are examples of businesses that may be barred from filing.
4. **Lack of case law:** The LLC business form is a relatively new concept. As a result, not a lot of cases have been decided surrounding LLCs. Case law is important because of predictability. If you know a court has ruled a certain way, you can act accordingly to protect yourself.
5. **Confusion About Roles:** Whereas corporations have specific roles (like directors, managers, and employees), LLCs generally do not. This can make it difficult for the company and especially investors to know who's in charge, who can sign certain contracts, etc. Some of this confusion can be avoided by creating an LLC Operating Agreement.
6. **Limited Life:** In many jurisdictions, if a member departs the LLC, the LLC ceases to exist. This is unlike a corporation whose identity is unaffected by the comings and goings of shareholders. Members of LLCs can combat this weakness in the Operating Agreement.

## **SOURCES OF RAISING CAPITAL**

### **Sources of raising long-term capital:**

- 1) **Issue of Shares:** The amount of capital decided to be raised from members of the public is divided into units of equal value. These units are known as share and the aggregate values of shares are known as share capital of the company. Those who subscribe to the share capital become members of the company and are called shareholders. They are the owners of the company.
  - a) **Issue of Preference Shares:** Preference share have three distinct characteristics. Preference shareholders have the right to claim dividend at a fixed rate, which is decided according to the terms of

## **BEFA UNIT I**

issue of shares. Moreover, the preference dividend is to be paid first out of the net profit. The balance, if any, can be distributed among other shareholders that is, equity shareholders. However, payment of dividend is not legally compulsory. Only when dividend is declared, preference shareholders have a prior claim over equity shareholders.

Preference shareholders also have the preferential right of claiming repayment of capital in the event of winding up of the company. Preference capital has to be repaid out of assets after meeting the loan obligations and claims of creditors but before any amount is repaid to equity shareholders.

- b) **Issue of Equity Shares:** The most important source of raising long-term capital for a company is the issue of equity shares. In the case of equity shares there is no promise to shareholders a fixed dividend. But if the company is successful and the level profits are high, equity shareholders enjoy very high returns on their investment. This feature is very attractive to many investors even though they run the risk of having no return if the profits are inadequate or there is loss. They have the right of control over the management of the company and their liability is limited to the value of shares held by them.

**2) Issue of Debentures:** When a company decides to raise loans from the public, the amount of loan is divided into units of equal. These units are known as debentures. A debenture is the instrument or certificate issued by a company to acknowledge its debt. Those who invest money in debentures are known as 'debenture holders'. They are creditors of the company. Debentures carry a fixed rate of interest, and generally are repayable after a certain period.

**3) Loans from financial Institutions:** Government with the main object of promoting industrial development has set up a number of financial institutions. These institutions play an important role as sources of company finance. These institutions provide medium and long-term finance to industrial enterprises at a reasonable rate of interest. Thus companies may obtain direct loan from the financial institutions for

## **BEFA UNIT I**

expansion or modernization of existing manufacturing units or for starting a new unit.

- 4) Retained Profits:** Successful companies do not distribute the whole of their profits as dividend to shareholders but reinvest a part of the profits. The amount of profit reinvested in the business of a company is known as retained profit.
- 5) Public Deposits:** An important source of medium – term finance which companies make use of is public deposits. This requires advertisement to be issued inviting the general public of deposits. Against the deposit, the company mentioning the amount, rate of interest, time of repayment and such other information issues a receipt.

### **Sources of raising short-term capital:**

- 1) Trade credit:** Trade credit is a common source of short-term finance available to all companies. It refers to the amount payable to the suppliers of raw materials, goods etc. after an agreed period, which is generally less than a year. It is customary for all business firms to allow credit facility to their customers in trade business. Thus, it is an automatic source of finance.
- 2) Bank loans and advances:** Money advanced or granted as loan by commercial banks is known as bank credit. Companies generally secure bank credit to meet their current operating expenses. The most common forms are cash credit and overdraft facilities. Under the cash credit arrangement, the maximum limit of credit is fixed in advance on the security of goods and materials in stock.
- 3) Overdraft:** In the case of overdraft, the company is allowed to overdraw its current account up to the sanctioned limit. This facility is also allowed either against personal security or the security of assets. Interest is charged on the amount actually overdrawn, not on the sanctioned limit.
- 4) Discounting of Bills:** Commercial banks also advance money by discounting bills of exchange. A company having sold goods on credit may draw bills of exchange on the customers for their acceptance. A bill is an order in writing requiring the customer to pay the specified amount after a

## **BEFA UNIT I**

certain period (say 60 days or 90 days). After acceptance of the bill, the company can draw the amount as an advance from many commercial banks on payment of a discount. The amount of discount, which is equal to the interest for the period of the bill, and the balance, is available to the company. Bill discounting is thus another source of short-term finance available from the commercial banks.

- 5) Short term loans from finance companies:** Short-term funds may be available from finance companies on the security of assets. Some finance companies also provide funds according to the value of bills receivable or amount due from the customers of the borrowing company, which they take over.

## **NON-CONVENTIONAL SOURCES OF FINANCE**

### **1. Venture capital**

Venture capital is financing that investors provide to start-up companies and small businesses that are believed to have long-term growth potential. Venture capital generally comes from venture capital firms, which comprise of professionally well-off investors, investment banks and any other financial institutions. However, it does not always take just a monetary form; it can be provided in the form of technical or managerial expertise.

Though it can be risky for the investors who put up the funds, the potential for above-average returns is an attractive payoff. For new companies or ventures that have a limited operating history (under two years), venture capital funding is increasingly becoming a popular – even essential – source for raising capital, especially if they lack access to capital markets, bank loans or other debt instruments. The main downside is that the investors usually get equity in the company, and thus a say in company decisions.

In a venture capital deal, large ownership chunks of a company are created and sold to a few investors through independent limited partnerships that are established by venture capital firms. Sometimes these partnerships consist of a pool of several similar enterprises. One important difference between venture capital and other private equity deals, however, is that venture capital tends to focus on emerging companies seeking substantial funds for the first time , while private equity tends to fund larger, more established companies that are seeking an equity infusion or a chance for company founders to transfer some of their ownership stake.

## **BEFA UNIT I**

### **2. Angel Investors**

An **angel investor** is a person who invests in a business venture, providing capital for start-up or expansion. Angel investors are typically individuals who have spare cash available and are looking for a higher rate of return than would be given by more traditional investments. An angel investment is a form of equity financing - the investor supplies funding in exchange for taking an equity position in the company.

### **3. Private Equity**

Private equity is capital that is not noted on a public exchange. Private equity is composed of funds and investors that directly invest in private companies, or that engage in buyouts of public companies, resulting in the delisting of public equity. Institutional and retail investors provide the capital for private equity, and the capital can be utilized to fund new technology, make acquisitions, expand working capital, and to bolster and solidify a balance sheet.

Private equity comes primarily from institutional investors and accredited investors, who can dedicate substantial sums of money for extended time periods. In most cases, considerably long holding periods are often required for private equity investments, in order to ensure a turnaround for distressed companies or to enable liquidity events such as an initial public offering (IPO) or a sale to a public company.

### **4. IPO**

An initial public offering, or IPO, is the very first sale of stock issued by a company to the public. Prior to an IPO the company is considered private, with a relatively small number of shareholders made up primarily of early investors (such as the founders, their families and friends) and professional investors (such as venture capitalists or angel investors). The public, on the other hand, consists of everybody else – any individual or institutional investor who wasn't involved in the early days of the company and who is interested in buying shares of the company. Until a company's stock is offered for sale to the public, the public is unable to invest in it. You can potentially approach the owners of a private company about investing, but they're not obligated to sell you anything. Public companies, on the other hand, have sold at least a portion of their shares to the public to be traded on a stock exchange. This is why an IPO is also referred to as "going public."

**BEFA UNIT I**  
**E C O N O M I C S**

**INTRODUCTION**

The English word economics is derived from the ancient Greek word oikonomikos—meaning the management of a family or a household. Economics is the study of how individuals and societies make decisions about way to use scarce resources to fulfil wants and needs. Economics deals with individual choice, money and borrowing, production and consumption, trade and markets, employment and occupations, asset pricing, taxes and much more.

As an individual, for example, you constantly face the problem of having limited resources with which to fulfil your wants and needs. As a result, you must make certain choices with your money – what to spend it on, what not to spend it on, and how much to save for the future. You'll probably spend part of your money on relative necessities such as rent, electricity, clothing and food. Then you might use the rest to go to the movies, dine out or buy a smart phone. Economists are interested in the choices you make, and investigate why, for instance, you might choose to spend your money on a new mobile phone instead of replacing your old pair of shoes. The underlying essence of economics is trying to understand how individuals, companies, and nations as a whole behave in response to certain material constraints.

**DEFINITIONS**

- 1. Adam Smith's Definition:-** Adam Smith, considered to be the founding father of modern Economics, defines Economics as "**the study of the nature and causes of nations' wealth or simply as the study of wealth**". The central point in Smith's definition is wealth creation. He assumed that, the wealthier a nation becomes the happier are its citizens. Thus, it is important to find out, how a nation can be wealthy. Economics is the subject that tells us how to make a nation wealthy. Adam Smith's definition is a wealth-centred definition of Economics.
- 2. Alfred Marshall's Definition:-** Alfred Marshall also stressed the importance of wealth. But he also emphasised the role of the individual in the creation and the use of wealth. He defines: "**Economics is a study of man in the ordinary business of life. It enquires how he gets his income and how**

## **BEFA UNIT I**

**he uses it. Thus, it is on the one side, the study of wealth and on the other and more important side, a part of the study of man".**

- 3. Lionel Robbins' Definition:-** In his book '**Essays on the Nature and Significance of the Economic Science**', published in 1932, Robbins gave a definition which has become one of the most popular definitions of Economics. According to Robbins, "**Economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses**".

### **SIGNIFICANCE OF ECONOMICS**

1. Allows to know the basics of human needs, production, distribution, reuse and better use of resources.
2. It provides the basis for exchange of goods and services between individuals, organizations and even countries.
3. Generates systems, techniques and public policies to improve social welfare.
4. Help to set target prices of goods and services.
5. Adjust political, financial and even social imbalances.
6. Provides knowledge and techniques that prevent crises and help them out.
7. It uses econometric techniques to predict future economic conditions that could harm or benefit certain situations in ascertain place, and how to maximize the benefits and problems mystify.
8. As you can see, economics is a science that encompasses us completely.
9. To be an expert in this field you can study a university degree in economics, in this course the student will learn how the economy moves and how to generate the best social conditions.

## **BEFA UNIT I**

### **MICRO AND MACRO ECONOMICS**

The whole economic theory is broadly divided into two parts –

Micro economics and Macro economics.

These two terms were at first used by Ragnar Frisch in 1933. But these two words became popular worldwide and most of the economist using nowadays. The term 'micro' and 'macro' were derived from Greek words 'Mikros' and 'Makros' meaning 'small' and 'large' respectively. So micro economics deals with the analysis of an individual unit and macro economics with economy as a whole. For example, in micro economics we study how price of goods or factors of production are determined. In macro economics we study what are the causes of high or low level of employment.

So, according to Edwin Mansfield – "Micro economics deals with the economic behaviour of individual units such as consumers, firms, and resource owners; while macro economics deals with behaviour of economic aggregates such as gross national product and the level of employment.

#### **Meaning of Micro – economics**

The term micro was originated from Greek word 'Mikros' which means small. Hence, microeconomics is concerned on small economic units like as individual consumer, households, firms, industry etc.

Microeconomics may be defined as the branch of economic analysis which studies about the economic behaviour of individual economic unit may be a person, a particular households, a particular firm and an industry. The main objective of micro – economics is to explain the principles, problems and policies related to the optimum allocation of resources. According to K. E. Boulding, "Microeconomics is the study of particular firm, particular households, individual price, wage, income of the industry and particular commodity".

It is the study of individual tree not a whole forest. Hence, microeconomics tries to explain how an individual allocates his money income among various needs as well as how an individual maximize satisfaction level from the consumption of available limited resources. Microeconomics also explains about the process of determination of individual price with interaction of demand and supply. It helps

## **BEFA UNIT I**

to determine the price of the product and factor inputs. Therefore, it is also called as price theory or demand and supply theory. Simply microeconomics is microscopic study of the economy.

### **Meaning of Macro - economics**

The term macro- economics is derived from Greek word " Makros", which means " big". Hence, macro- economics studies not individual units but all the units combined together or the economy as a whole. Since it studies the economy in aggregate. It studies national income, national output, general price level, total employment, total savings, total investment and so on. It is also called "aggregate economics" or the "income theory".

**According to K.E. Boulding –** Macro- economics deals not with individual quantities but with aggregate of these quantities, not with individual incomes, but with national income, not with individual prices but with price level, not with individual output but with national output."

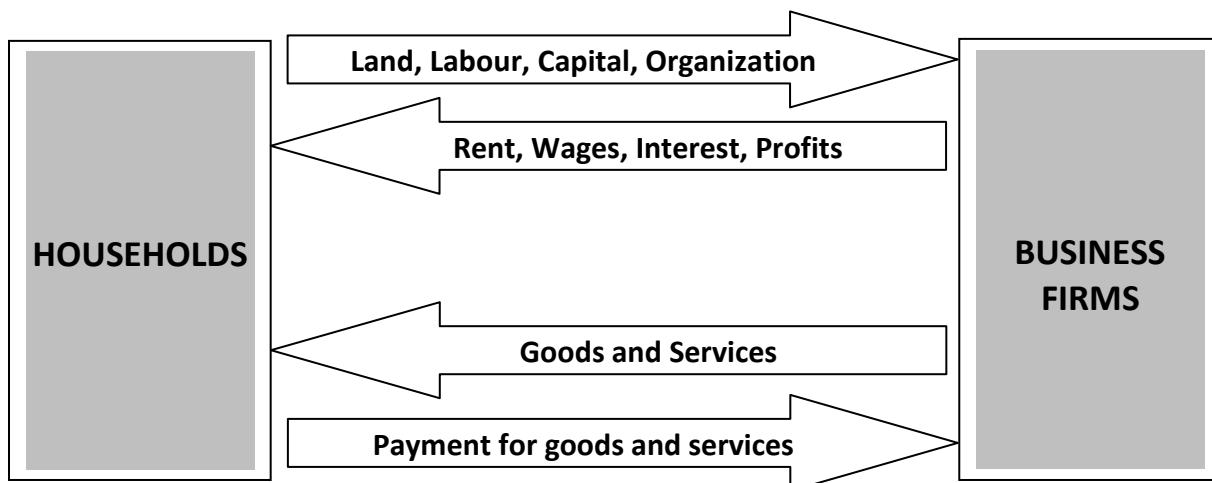
**J.M. Keynes** made an outstanding contribution in the development of macro-economics. It is also known as Keynesian Phenomenon.

### **NATIONAL INCOME**

In every country goods and services are produced in agriculture sector, industrial sector and service sector. The total value of final goods and services produced in a country in a year is called national income. National income was first calculated in India by Dadabai Naoroji in 1876. In our country national income is calculated every year by Central Statistical Organization (CSO).It includes payments made to all resources in the form of wages, interest, rent and profits.

According to Marshall: "The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial including services of all kinds. This is the true net annual income or revenue of the country or national dividend." In this definition, the word 'net' refers to deductions from the gross national income in respect of depreciation and wearing out of machines. And to this, must be added income from abroad.

## BEFA UNIT I



### **Circular Flow of National Income :-**

National income is a flow of money payments resulting from the productive resources of a country during a year. It has the concept of circular flow in this sense that the economic transactions which are made in a country during a particular year appears in different ways. The expenditure of one person is the income of another person, and his expenditure is also equal to value of goods and services. To explain this idea we assume that there is economy where there are only two sectors in the economy.

#### **1. Firms.**

#### **2. Households.**

Firms are required to produce goods. Households own the various factors of production. Firms require the services of households to produce goods. The firms hire the services of households to produce goods. These goods are again supplied to the households. When households sector purchases the goods it makes the payments. Similarly firms make the payment in the shape of rent, wages, and interest to the households against their services.

In this way the sum of prices of the goods and services must be equal to the sum of the reward for the services of factors of production.

So income flows from firms to households in exchange for these services and again the expenditure flows from households to firms. The goods which are produced by the firms these are purchased by the household. The flow of income flows from firms to household and flow of expenditure from household to firms will be equal. This is called circular flow of national income.

National income can be calculated on the basis of:

1. Flow of goods and services
2. Flow of income
3. Flow of expenditure on goods and services

## **BEFA UNIT I**

### **CONCEPTS OF NATIONAL INCOME**

There are various concepts of National Income. The main concepts of NI are: GDP, GNP, NNP, NI, PI, DI, and PCI. These different concepts explain about the phenomenon of economic activities of the various sectors of the economy.

#### **1. Gross Domestic Product (GDP)**

Gross domestic product- the market value of all final goods and services produced in a country during a specific period of time which is usually one year.

GDP is measured using market values, and not quantities. Production is measured in quantities, but then those quantities have to be changed to account for their value. In economics we use prices to place values on the final goods, so total production times price will give us the total value.

Final goods and services vs intermediate goods or services. A product is a final good or service when it is purchased by the final user. Intermediate products are used as an input to produce another good or service such as sugar being purchased to make soda. Sugar is an intermediate good, while soda is a final good.

GDP only includes the value of final goods, intermediate goods are not included. GDP only includes current production, and ignores the sale of used goods. If you purchase a bike in 2011, then that purchase is included in 2011 GDP measure, not 2010 or 2012. Also, if you sell that bike at any time in the future, the sale of that bike is not included in GDP.

An equation for GDP and some actual values:

$$\text{GDP} = C + I + G + NX$$

The GDP equation shows us that GDP is equal to consumption expenditure (C) plus investment expenditure (I) plus government expenditure (G) plus net exports ( $NX = \text{Exports} - \text{Imports}$ ).

#### **2. Gross National Product (GNP)**

Gross National Product is the total market value of all final goods and services produced annually in a country plus net factor income from abroad. Thus, GNP is the total measure of the flow of goods and services at market value resulting from current production during a year in a country including net factor income from abroad. The GNP can be expressed as the following equation:

$$\text{GNP} = \text{GDP} + \text{NFIA} \text{ (Net Factor Income from Abroad)}$$

## **BEFA UNIT I**

NFIA = Income earned by Indians in abroad through jobs or businesses –  
Income earned by foreigners in India by jobs or businesses.

### **3. Net National Product (NNP)**

Net National Product is the market value of all final goods and services after allowing for depreciation. It is also called National Income at market price. When charges for depreciation are deducted from the gross national product, we get it. Thus,

$$\text{NNP} = \text{GNP} - \text{Depreciation}$$

### **4. National Income (NI)**

National Income is also known as National Income at factor cost. National income at factor cost means the sum of all incomes earned by resources suppliers for their contribution of land, labor, capital and organizational ability which go into the years net production. Hence, the sum of the income received by factors of production in the form of rent, wages, interest and profit is called National Income. Symbolically,

$$\text{NI} = \text{NNP} + \text{Subsidies given by Govt.} - \text{Indirect Taxes}$$

### **5. Personal Income (PI)**

Personal Income is the total money income received by individuals and households of a country from all possible sources before direct taxes. Therefore, personal income can be expressed as follows:

$$\text{PI} = \text{NI} - \text{Corporate Income Taxes} - \text{Undistributed Corporate Profits} - \text{Social Security Contribution} + \text{Transfer Payments}$$

### **6. Disposable Income (DI)**

The income left after the payment of direct taxes from personal income is called Disposable Income. Disposable income means actual income which can be spent on consumption by individuals and families. Thus, it can be expressed as:

$$\text{DI} = \text{PI} - \text{Direct Taxes}$$

### **7. Per Capita Income (PCI)**

## **BEFA UNIT I**

Per Capita Income (average income) of a country is derived by dividing the national income of the country by the total population of a country. Thus,

$$\text{PCI} = \text{Total National Income} / \text{Total National Population}$$

### **IMPORTANCE OF NATIONAL INCOME**

**The following points highlight the top eleven reasons for growing importance of national income studies in recent years.**

#### **1. Economic Policy:**

Economic policy refers to the actions which Govt. Takes in the economic field such as Tax policy, Money supply policy, Interest rate policy etc. National income figures are an important tool of macroeconomic analysis and policy.

National income estimates are the most comprehensive measures of aggregate economic activity in an economy. It is through such estimates that we know the aggregate yield of the economy and can lay down future economic policy for development.

#### **2. Economic Planning:**

National income statistics are the most important tools for long-term and short-term economic planning. A country cannot possibly frame a plan without having a prior knowledge of the trends in national income. The Planning Commission in India also kept in view the national income estimates before formulating the five-year plans.

#### **3. Economy's Structure:**

National income statistics enable us to have clear idea about the structure of the economy. It enables us to know the relative importance of the various sectors of the economy and their contribution towards national income. From these studies we learn how income is produced, how it is distributed, how much is spent, saved or taxed.

## **BEFA UNIT I**

### **4. Inflationary and Deflationary Gaps:**

Inflationary gap means the amount by which the total demand is higher than the total supply. Deflationary gap means the amount by which the total demand is less than the total supply. National income and national product figures enable us to have an idea of the inflationary and deflationary gaps. For accurate and timely anti- inflationary and deflationary policies, we need regular estimates of national income.

### **5. Budgetary Policies:**

Modern governments try to prepare their budgets within the framework of national income data and try to formulate anti-cyclical policies according to the facts revealed by the national income estimates. Even the taxation and borrowing policies are so framed as to avoid fluctuations in national income.

### **6. National Expenditure:**

National income studies show how national expenditure is divided between consumption expenditure and investment expenditure. It enables us to provide for reasonable depreciation to maintain the capital stock of a community. Too liberal allowance of depreciation may prove harmful as it may unnecessarily lead to a reduction in consumption.

### **7. Distribution of Grants-in-aid:**

National income estimates help a fair distribution of grants-in-aid by the federal governments to the state governments and other constituent units.

### **8. Standard of Living Comparison:**

National income studies help us to compare the standards of living of people in different countries and of people living in the same country at different times.

### **9. International Sphere:**

National income studies are important even in the international sphere as these estimates not only help us to fix the burden of international payments equitably amongst different nations but also enable us to determine the subscriptions and

## **BEFA UNIT I**

quotas of different countries to international organisations like the UNO, IMF, IBRD. etc.

### **10. Defense and Development:**

National income estimates help us to divide the national product between defence and development purposes. From such figures we can easily know how much can be spared for war by the civilian population.

### **11. Public Sector:**

National income figures enable us to know the relative roles of public and private sectors in the economy. If most of the activities are performed by the state, we can easily conclude that public sector is playing a dominant role.

## **INFLATION**

Inflation is defined as a sustained increase in the general level of prices for goods and services in a country, and is measured as an annual percentage change. Under conditions of inflation, the prices of things rise over time. Put differently, as inflation rises, every rupee you own buys a smaller percentage of a good or service. When prices rise, and alternatively when the value of money falls you have inflation.

The value of a rupee (or any unit of money) is expressed in terms of its purchasing power, which is the amount of real, tangible goods or actual services that money can buy at a moment in time. When inflation goes up, there is a decline in the purchasing power of money. For example, if the inflation rate is 2% annually, then theoretically a Rs.1 chocolate will cost Rs.1.02 in a year. After inflation, your rupee does not go as far as it did in the past.

## **FEATURES OF INFLATION**

Following are the main features of inflation:

1. Inflation is always accompanied by a rise in the price level. It is a process of uninterrupted increase in prices.
2. Inflation is a monetary phenomenon and it is generally caused by excessive money supply.

## **BEFA UNIT I**

3. Inflation is essentially an economic phenomenon as it originates in the economic system and is the result of action and interaction of economic forces.
4. Inflation is a dynamic process as observed over the long period.
5. A cyclical movement of prices is not inflation.
6. Pure inflation starts after full employment.
7. Inflation may be demand-pull or cost-push.

### **TYPES OF INFLATION**

1. **Creeping Inflation:** This is also known as mild inflation or moderate inflation. This type of inflation occurs when the price level persistently rises over a period of time at a mild rate. When the rate of inflation is less than 10 per cent annually, or it is a single digit inflation rate, it is considered to be a moderate inflation.
2. **Galloping Inflation:** If mild inflation is not checked and if it is uncontrollable, it may assume the character of galloping inflation. Inflation in the double or triple digit range of 20, 100 or 200 percent a year is called galloping inflation . Many Latin American countries such as Argentina, Brazil had inflation rates of 50 to 700 percent per year in the 1970s and 1980s.
3. **Hyperinflation:** It is a stage of very high rate of inflation. While economies seem to survive under galloping inflation, a third and deadly strain takes hold when the cancer of hyperinflation strikes. Nothing good can be said about a market economy in which prices are rising a million or even a trillion percent per year . Hyperinflation occurs when the prices go out of control and the monetary authorities are unable to impose any check on it. Germany had witnessed hyperinflation in 1920's.
4. **Stagflation:** It is an economic situation in which unemployment increases along with rising inflation causing demand to remain stagnant in a given period. In fact, it is an indication of an inefficient market, as traditionally, there is an inverse relationship between unemployment rates and inflationary

## **BEFA UNIT I**

pressures. Stagflation was witnessed by developed countries in 1970s, when world oil prices rose dramatically.

5. **Deflation:** Deflation is the reverse of inflation. It refers to a sustained decline in the price level of goods and services. It occurs when the annual inflation rate falls below zero percent (a negative inflation rate), resulting in an increase in the real value of money. Japan suffered from deflation for almost a decade in 1990s.

### **MONEY SUPPLY AND INFLATION**

Inflation refers to a sustained rise in the prices of goods and services. When inflation occurs, the buying value of a currency unit erodes, meaning that a person needs more money to buy the same product. Most economists suggest there is a direct relationship between the amount of money in an economy, known as the money supply, and inflation levels. Understanding the relationship between money supply and inflation is far from easy or predictable, since inflation can easily be influenced by other factors as well.

The relationship between money supply and inflation is explained differently depending on the type of economic theory used. In the quantity of money theory, also called monetarism, the relationship is expressed as  $MV=PT$ , or Money Supply (the amount of money in circulation)  $\times$  Velocity of circulation (the speed with which money flows round the economy) = Price Level  $\times$  Transactions or output. The Velocity and Transactions are considered to be constants, so according to this explanation, supply and prices have a direct relationship. MV represents supply of money and PT represents demand for money. Assuming V and T are constant, price level varies in direct proportion to the quantity of money. If supply of money increases, there is inflation or rise in prices. In Keynesian theory, while there is still a relationship between money supply and inflation, it is not the only large factor that can affect inflation and prices. Generally, the Keynesian theory stresses the relationship between total or aggregate demand and inflationary changes.

For example, assume a very small economy that has a money supply of Rs.50 and only two people i.e., Farmer and Mechanic. Farmer goes to Mechanic for getting his tractor repaired and paid Rs. 50. In turn, Mechanic purchases rice worth of Rs. 40 from Farmer. After few

## **BEFA UNIT I**

months, again Mechanic purchases maize worth of Rs. 10. These are the transactions taken place in our imaginary economy in a year.

$$MV = PT$$

M = Money supplied, V = Velocity ( The rate at which money is exchanged from one transaction to another), P = Average general price, T = No. of transactions.

MV = Total money supply; PT = Value of all the transactions (Value of goods and services produced, i.e., GDP)

$$M = 50 \quad V = ? \quad P = (50+40+10)/3 \text{ transactions} = 33.33 \quad T = 3$$

$$V = PT/M$$

$$50 \times V = 33.33 \times 3$$

$$V = 100/50 = 2$$

If money supplied is increased by 100%, then price level also increases by 100% when V and T are constant.

$$MV = PT$$

$$100 \times 2 = P \times 3$$

$$P = 200/3 = 66.67$$

Changes in money supply are often used to try and control inflationary conditions. Central bank will generally lower lending rates and increase interest. When inflation drops below a target level, these standards are generally relaxed in an attempt to stimulate the economy.

## **BUSINESS CYCLE**

Business cycles, also called trade cycles or economic cycles, refer to perpetual features of the economic environment of a country. In simple words, business cycles can be defined as fluctuations in the economic activities of a country. The economic activities of a country include total output, income level, prices of products and services, employment, and rate of consumption. All these activities are interrelated; if one activity changes, rest of them would also show changes.

## **BEFA UNIT I**

These changes in the economic activities together produce a bigger change in the overall economy of a nation. This overall change in an economy is termed as a business cycle. Business cycles are generally regular and periodical in nature.

**Definition:** Lord Keynes defines business cycle as " a business 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 percentage".

### **CHARACTERISTICS OF A BUSINESS CYCLE**

1. **Cyclical movements:** When excess movement in one direction, say depression tends to bring into operations not only in its remedy but also a stimulus to an excess movement in the other direction, say boom, the movement is said to be cyclical. It is like the movement of a pendulum. The movement in one direction tends to automatically generate a movement in the opposite direction of prosperity in the economy sow the seeds of depression also.
2. **International in nature:** it is very likely that boom in the economy of one country boom in another country. Different countries are linked with one another through international trade and foreign exchange. This implies that prosperity in one country contributes to prosperity in other countries also.
3. **Varying degree of impact:** Since periods of business cycles are more likely to be different, they tend to vary in the degree of their impact on an economy. Business cycles may affect different industries in an economy in varying degrees.
4. **Irregular patterns:** No two business cycles are similar in rhythm. There is no fixed pattern governing each business cycle.
5. **Wave like movement:** Business cycles reflect a wavelike movement that implies a composite photograph of all the recorded cycles. One complete round from boom to depression and depression to boom is called business cycle.
6. **Fluctuation in productive capacities:** Production capacities undergo wild fluctuations are measured in terms of unemployment.
7. **Fluctuations in price levels:** The upward phase of cycle is identified with expansion of production capacities, diminishing unemployment and rise in prices. On the other hand, the downward phase of cycle is identified with contraction of production capacities, increasing unemployment and fall in prices.
8. Every cycle has four distinct phases: (a) depression, (b) revival, (c) prosperity or boom, and (d) recession.

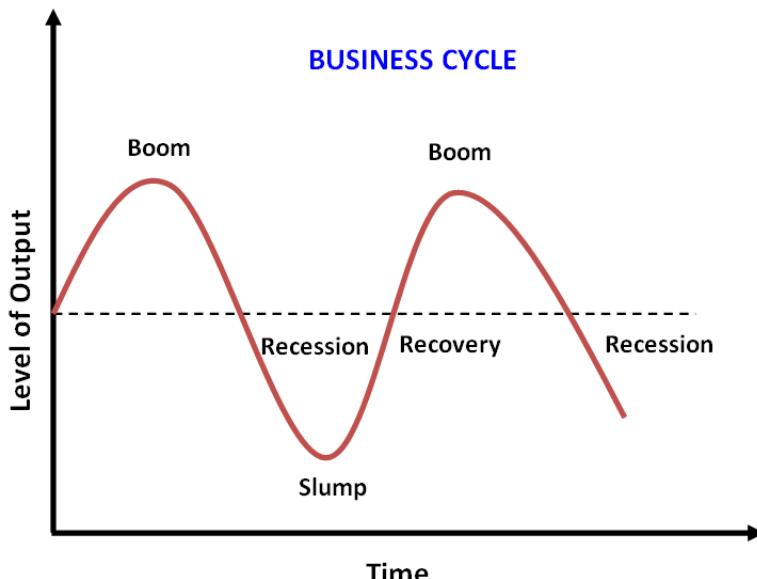
**BEFA UNIT I**  
**PHASES OF A BUSINESS CYCLE**

**(a) Prosperity/Expansion/Boom :** In this stage increase production, high capital investment in basic industries, expansion of the bank credit, high prices, high profit, full employment.

**(b) Recession :** This stage is characterized by liquidation in the stock market, strain in the banking system and some liquidation of bank loan, small fall in price, sharp reduction in demand for capital equipment and abandoning of relatively new projects. Unemployment leads to full income expenditure, price & profits. It is cumulative effect once a recession starts it goes on gathering momentum and finally assumes the shape of depression.

**(c) Depression/Slump :** It is a protective period in which Business activities in the country is far below the normal. It is characterized by a sharp deduction of production, mass unemployment, low employment, falling prices, falling profits, low wages, and contraction of credit, high rate of business failures and an atmosphere of all round pessimism and despair all construction activities come to a more or less complete stand still during depression. The consumer goods industries and however, not much affected.

**(d) Recovery :** It implies increase in business activity after the lowest point of depression has been reached. The entrepreneur began to feel that the economic situation was after all not so bad. This leads to new innovation in business activities. The industrial production picks up slowly and gradually. The volume of employment also straightly increases. There is a slow rise in prices accompanied by a small rise in profit. Wages also raise new investment takes place in capital goods industries. The bank also expands credit. Pessimism is gradually replaced by an atmosphere of all round cautious hope.



**BEFA UNIT I**  
**B U S I N E S S   E C O N O M I C S**

**INTRODUCTION**

Business Economics, also called Managerial Economics, is the application of economic theory and methodology to business. Business involves decision-making. Decision making means the process of selecting one out of two or more alternative courses of action. The question of choice arises because the basic resources such as capital, land, labor and management are limited and can be employed in alternative uses. The decision-making function thus becomes one of making choice and taking decisions that will provide the most efficient means of attaining a desired end, say, profit maximization. Different aspects of business need attention of the chief executive. He may be called upon to choose a single option among the many that may be available to him. It would be in the interest of the business to reach an optimal decision- the one that promotes the goal of the business firm. A scientific formulation of the business problem and finding its optimal solution requires that the business firm is he equipped with a rational methodology and appropriate tools.

Economic theory underscores the fact that each firm in the industry operates under competitive conditions and hence tries to operate more efficiently to withstand the competition. The indicator of efficiency is profits. The assumption here is that each firm has one man as the owner and entrepreneur, and that his sole aim is to maximize profits. As time passed, one man firms were replaced by partnerships and giant companies and the structure of the firm changed to include the owner/entrepreneur/shareholders on the one hand and that managers on the other. The responsibility of the owners/entrepreneur/shareholders got bifurcated. The day to day affairs of the firm were looked after by the managers and owners/entrepreneur/shareholders took organizational decisions aimed at maximizing profits. The goals of the owners/entrepreneurs/shareholders are called organizational goals while the goals of the managers are referred to as Business goals also known as operational goals.

**DEFINITIONS**

According to **E. F. Brigham** and **J. L. Pappas**, "*Managerial Economics is the application of Economic theory and methodology to business administration practise.*"

## **BEFA UNIT I**

According to **McNair** and **Meriam**, "Managerial Economics consists of the use of Economic modes of thought to analyse business situations."

According to **M. H. Spencer** and **L. Siegelman**, "Managerial Economics is the integration of economic theory with business practise for the purpose of facilitating decision making and forward planning."

According to **Hauge**, "Managerial Economics is concerned with using logic of economics, mathematics & statistics to provide effective ways of thinking about business decision problems."

According to **Joel Dean**, "The purpose of Managerial Economics is to show how economic analysis can be used in formulating business policies."

### **NATURE OF BUSINESS ECONOMICS**

Business economics is, perhaps, the youngest of all the social sciences. Since it originates from Economics, it has the basis features of economics, such as assuming that other things remaining the same. This assumption is made to simplify the complexity of the Business phenomenon under study in a dynamic business environment so many things are changing simultaneously. This set a limitation that we cannot really hold other things remaining the same. In such a case, the observations made out of such a study will have a limited purpose or value. Managerial economics also has inherited this problem from economics.

The other features of managerial economics are explained as below:

**(a)Microeconomics in nature:** Business economics is concerned with finding the solutions for different managerial problems of a particular firm. Thus, it is more close to microeconomics.

**(b)Operates against the backdrop of macroeconomics:** The macroeconomics conditions of the economy are also seen as limiting factors for the firm to operate. In other words, the managerial economist has to be aware of the limits set by the macroeconomics conditions such as government industrial policy, inflation and so on.

**(c)Normative economics:** Economics can be classified into two broad categories normally. Positive Economics and Normative Economics. Positive

## **BEFA UNIT I**

economics describes “what is” i.e., observed economic phenomenon. The statement “Poverty in India is very high” is an example of positive economics. Normative economics describes “what ought to be” i.e., it differentiates the ideals from the actual. Ex: People who earn high incomes ought to pay more income tax than those who earn low incomes. A normative statement usually includes or implies the words ‘ought’ or ‘should’. They reflect people’s moral attitudes and are expressions of what a team of people ought to do.

**(d)Prescriptive actions:** Prescriptive action is goal oriented. Given a problem and the objectives of the firm, it suggests the course of action from the available alternatives for optimal solution. It does not merely mention the concept, it also explains whether the concept can be applied in a given context or not. For instance, the fact that variable costs as marginal costs can be used to judge the feasibility of an export order.

**(e)Applied in nature:** ‘Models’ are built to reflect the real life complex business situations and these models are of immense help to managers for decision-making. The different areas where models are extensively used include inventory control, optimization, project management etc. In Business economics, we also employ case study methods to conceptualize the problem, identify that alternative and determine the best course of action.

**(f)Offers scope to evaluate each alternative:** Business economics provides an opportunity to evaluate each alternative in terms of its costs and revenue. The Business economist can decide which is the better alternative to maximize the profits for the firm.

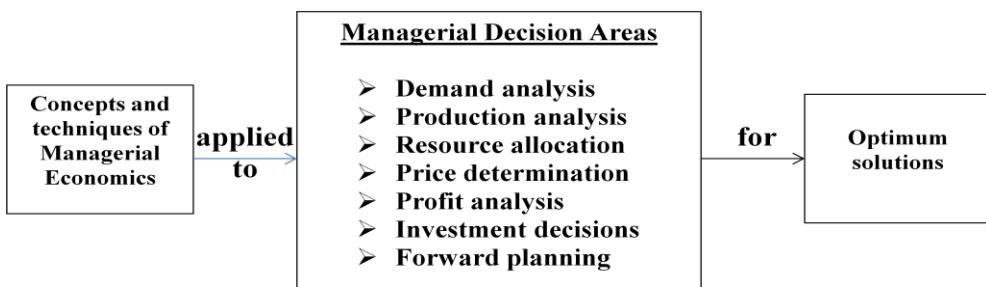
**(g)Interdisciplinary:** The contents, tools and techniques of Business economics are drawn from different subjects such as economics, management, mathematics, statistics, accountancy, psychology, organizational behavior, sociology and etc.

**(h)Assumptions and limitations:** Every concept and theory of Business economics is based on certain assumption and as such their validity is not universal. Where there is change in assumptions, the theory may not hold good at all.

## **BEFA UNIT I**

### **SCOPE OF BUSINESS ECONOMICS**

The main focus of Business economics is to find the solution to Business problems for which the Business economist makes use of the concepts, tools and techniques of economics and other related disciplines.



**Fig: Scope of Managerial Economics**

#### **1. Demand Analyses and Forecasting:**

A firm can survive only if it is able to meet the demand for its product at the right time, within the right quantity. Understanding the basic concepts of demand is essential for demand forecasting. Demand analysis should be a basic activity of the firm because many of the other activities of the firms depend upon the outcome of the demand forecast. Demand analysis provides:

- a) The basis for analyzing market influences on the firm's products and thus helps in the adaptation to those influences.
- b) Demand analysis also highlights factors which influence the demand for a product. This helps to manipulate demand. Thus demand analysis studies not only the price elasticity but also income elasticity, cross elasticity as well as the influence of advertising expenditure. With the advent of computers, demand forecasting has become an increasingly important function of Business economics.

#### **2. Price determination:**

Pricing decisions have been always within the preview of Business economics. Pricing policies are merely a subset of broader class of Business economic problems. Price theory helps to explain how prices are determined under different types of market conditions. Competition analysis includes the anticipation of the response of competing firms' pricing, advertising and

## **BEFA UNIT I**

marketing strategies. Product line pricing and price forecasting occupy an important place here.

### **3. Production and cost analysis:**

Production analysis is in physical terms. While the cost analysis is in monetary terms. Cost concepts and classifications, cost-out-put relationships, economies and diseconomies of scale and production functions are some of the points constituting cost and production analysis.

### **4. Resource Allocation:**

Business Economics is the traditional economic theory that is concerned with the problem of optimum allocation of scarce resources. Marginal analysis is applied to the problem of determining the level of output, which maximizes profit. In this respect, linear programming techniques are used to solve optimization problems. In fact, linear programming is one of the most practical and powerful managerial decision making tools currently available.

### **5. Profit analysis:**

Profit making is the major goal of firms. There are several constraints here on account of competition from other products, changing input prices and changing business environment hence in spite of careful planning, there is always certain risk involved. Business economics deals with techniques of averting or minimizing risks. Profit theory guides in the measurement and management of profit, in calculating the pure return on capital, besides future profit planning.

### **6. Investment decisions:**

Capital is the foundation of business. Lack of capital may result in small size of operations. Availability of capital from various sources like equity capital, institutional finance etc. may help to undertake large-scale operations. Hence efficient allocation and management of capital is one of the most important tasks of the managers. The major issues related to capital analysis are:

1. The choice of investment project
2. Evaluation of the efficiency of capital

## **BEFA UNIT I**

### 3. Most efficient allocation of capital

Knowledge of capital theory can help very much in taking investment decisions. This involves, capital budgeting, feasibility studies, analysis of cost of capital etc.

### **7. Forward planning:**

Strategic planning provides management with a framework on which long-term decisions can be made which has an impact on the behavior of the firm. The firm sets certain long-term goals and objectives and selects the strategies to achieve the same. Strategic planning is now a new addition to the scope of Business economics with the emergence of multinational corporations. The perspective of strategic planning is global.

## **THE ROLE OF BUSINESS ECONOMIST**

The **role of business economist** can be summarized as follows:

1. He studies the economic patterns at macro-level and analysis its significance to the specific firm he is working in.
2. He has to consistently examine the probabilities of transforming an ever-changing economic environment into profitable business avenues.
3. He assists the business planning process of a firm.
4. He also carries cost-benefit analysis.
5. He assists the management in the decisions pertaining to internal functioning of a firm.
6. In addition, a business economist has to analyze changes in macro-economic indicators such as national income, population, business cycles, and their possible effect on the firm's functioning.
7. He is also involved in advising the management on public relations, foreign exchange, and trade.
8. He guides the firm on the likely impact of changes in monetary and fiscal policy on the firm's functioning.

## **BEFA UNIT I**

9. The most significant function of a business economist is to conduct a detailed research on industrial market.

10. He must be vigilant and must have ability to cope up with the pressures.

11. He also provides management with economic information such as tax rates, competitor's price and product, etc.

## **MULTI-DISCIPLINARY NATURE OF BUSINESS ECONOMICS**

Many new subjects have evolved in recent years due to the interaction among basic disciplines. While there are many such new subjects in natural and social sciences, Business economics can be taken as the best example of such a phenomenon among social sciences. Hence it is necessary to trace its roots and relationship with other disciplines.

### ***1. Relationship with economics:***

The relationship between Business economics and economics theory may be viewed from the point of view of the two approaches to the subject Viz. Micro Economics and Macro Economics. Microeconomics is the study of the economic behavior of individuals, firms and other such micro organizations. Business economics is rooted in Micro Economic theory. Business Economics makes use of several Micro Economic concepts such as marginal cost, marginal revenue, elasticity of demand as well as price theory and theories of market structure to name only a few. Macro theory on the other hand is the study of the economy as a whole. It deals with the analysis of national income, the level of employment, general price level, consumption and investment in the economy and even matters related to international trade, Money, public finance, etc.

### ***2. Relationship with accounting:***

Business economics has been influenced by the developments in management theory and accounting techniques. A proper knowledge of accounting techniques is very essential for the success of the firm because profit maximization is the major objective of the firm. Business Economist requires a proper knowledge of cost and revenue information and their classification.

### ***3. Relationship with mathematics:***

## **BEFA UNIT I**

The use of mathematics is significant for Business economics in view of its profit maximization goal along with optimal use of resources. The major problem of the firm is how to minimize cost, how to maximize profit or how to optimize sales. Mathematical concepts and techniques are widely used in economic logic to solve these problems. Geometry, Algebra and calculus are the major branches of mathematics which are of use in Business economics.

### **4. Relationship with Statistics:**

A successful businessman must correctly estimate the demand for his product. Statistical methods provide a sure base for decision-making. Thus statistical tools are used in collecting data and analyzing them to help in the decision making process. Statistical tools like the theory of probability and forecasting techniques help the firm to predict the future course of events. Business Economics also make use of correlation and multiple regressions in related variables like price and demand to estimate the extent of dependence of one variable on the other.

### **5. Relationship with Operations Research:**

The development of techniques and concepts such as linear programming, inventory models and game theory is due to the development of this new subject of operations research in the post-war years. Operations research is concerned with the complex problems arising out of the management of men, machines, materials and money.

Operation research provides a scientific model of the system and it helps Business economists in the field of product development, material management, and inventory control, quality control, marketing and demand analysis.

### **7. Relationship with Computer Science:**

Computers are used in data and accounts maintenance, inventory and stock controls and supply and demand predictions. What used to take days and months is done in a few minutes or hours by the computers. In fact computerization of business activities on a large scale has reduced the workload of Business personnel.

## **BEFA UNIT II**

### **DEMAND ANALYSIS**

In common parlance, demand means the desire for an object. But in economics demand is something more than this. According to Stonier and Hague, “Demand in economics means demand backed up by enough money to pay for the goods demanded”. This means that the demand becomes effective only if it is backed by the purchasing power. In addition to this, there must be willingness to buy a commodity. Thus demand in economics means the desire backed by the willingness to buy a commodity and the purchasing power to pay.

In the words of “**Benham**” “The demand for anything at a given price is the amount of it which will be bought per unit of time at that Price”.

Hence, demand refers to the amount of commodity which an individual consumer is willing to purchase at given price in a given period. The demand is said to exist when the following three conditions are fulfilled.

1. Desire to purchase
2. Ability to pay
3. Willing to pay

Ex: A beggar may have desire to purchase a car but he cannot pay money for it.

Ex: A miser does not purchase a car but he can pay money for it.

### **DEMAND FUNCTION**

Demand function is a function which describes a relationship between one variable and its determinants. The demand function for a good relates the quantity of good which consumers demand during a given period to the factors which influence the demand. Quantity demanded is dependent variable and all the factors are independent variables. The factors can be built up into a demand function. The demand function can be mathematically expressed as follows:

$$Q = f(P, I, T, P_1..P_n, E_P, E_I, A, O)$$

$Q$ = Quantity demanded
$f$ = Function of
$P$ = Price of goods itself
$I$ = Income of consumers
$T$ = Taster and preferences
$P_1..P_n$ = Price of related goods
$E_P$ = Expectation about future price
$E_I$ = Expectation about future income
$A$ = Advertisement
$O$ = Other factors

### **LAW OF DEMAND:**

Law of demand shows the relationship between price and quantity demanded of a commodity in the market. In the words of Marshall, “the amount demand increases with a fall in price and diminishes with a rise in price”.

## **BEFA UNIT II**

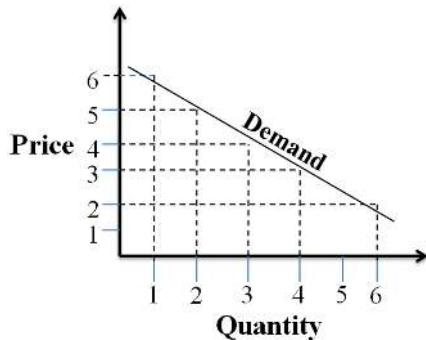
The law of demand states that “ **other things remaining constant, the higher the price of the commodity, the lower is the demand and lower the price, higher is the demand**”. It is called as **ceteris paribus** (Latin phrase meaning other things constant.)

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

**Demand Schedule:**

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

**Demand Curve:**



When the price falls from Rs. 6 to 5, quantity demand increases from 1 to 2. In the same way as price falls, quantity demanded increases. On the basis of the demand schedule, we can draw the demand curve. The above demand curve shows the inverse relationship between price and quantity demanded of apple. It is downward sloping.

### **Assumptions:**

Law of demand is based on certain assumptions:

1. There 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 commodity should not confer any distinction
6. The demand for the commodity should be continuous
7. People should not expect any change in the price of the commodity

### **EXCEPTIONS TO LAW OF DEMAND**

According to law of demand, other things being constant, as the price increases, the demand for the commodity decreases and vice-versa. But this is not true all the time. In some cases, as the price increases, the demand for the commodity will also increase and the demand decreases when the price decreases. All these cases are considered as exceptions to the law of demand.

The following are the exceptions to the law of demand.

#### **1. Giffen goods or Giffen paradox:**

The Giffen good or inferior good or cheap good is an exception to the law of demand. The demand for these goods varies directly with the variations in prices i.e., there exists direct relation between the quantity demanded and the price of the commodity. Giffen goods may or may not exist in the real world.

## BEFA UNIT II

Giffen goods are named after Sir Robert Giffen. He has conducted a survey on American laboring families who consume bread and meat. The survey revealed that they spend more of their income on bread because it is their staple food or main food and less of their income on meat. When price of bread increases, after purchasing bread, they don't have surplus money to buy meat. So, the rise in the price of bread forced the people to buy more bread by reducing the consumption of meat and thus raised the demand for bread. The goods like bajra, barley, gram, millets, vegetables fall under the category of Giffen goods.

### **2. Goods of status**

In some situations, certain commodities are demanded just because they are expensive or prestige goods and are usually used as status symbols to display one's wealth in the society. Examples of such commodities are diamonds, air conditioned car, duplex houses etc. as the price of these commodities increase, they are more considered as status symbols and hence their demand gets raised. This goes against the law of demand.

### **3. Ignorance:**

Sometimes, the quality of the commodity is Judged by its price. Consumers think that the product is superior if the price is high. As such they buy more at a higher price.

### **4. consumer expectations of future prices**

If the price of the commodity is increasing, the consumers will buy more of it because of the fear that it increase still further. Similarly, if the consumer expects the future prices to decrease, he may not purchase the commodity thinking that the good may be of bad quality. This violates the law of demand.

### **5. Fear of shortage:**

During the times of emergency of war, People may expect shortage of a commodity. At that time, they may buy more at a higher price to keep stocks for the future.

### **6. Necessaries:**

In the case of necessities like rice, vegetables etc. people buy more even at a higher price.

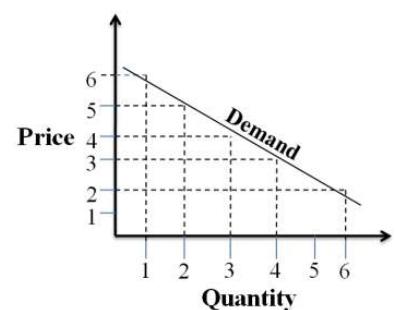
## **DETERMINANTS OF DEMAND**

There are several factors or determinants that affect the individual demand and market demand for a product. 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:

### **1. 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. The relation between price and demand is called the Law of Demand. The demand for a commodity varies inversely with its price. A decrease in price increases the purchasing power of consumers and an increase in the price decreases the purchasing power of the consumers.

### **2. Income of the Consumer:**

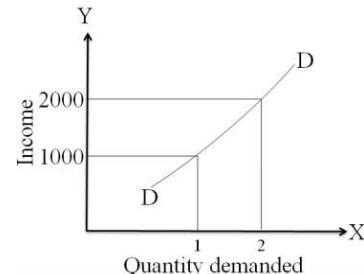


## BEFA UNIT II

The second most important factor influencing demand is consumer income. Individual consumer's income determines his purchasing ability. When other things remaining constant, if income increases, demand increases and vice-versa. An increase in income makes an individual to buy many commodities. The effect of income on demand can be analysed for normal goods, perishable goods and inferior goods.

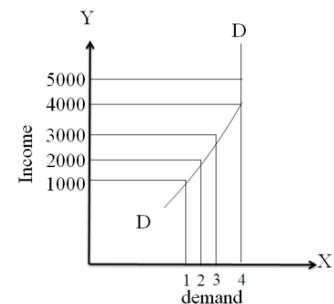
- a) **Normal goods:** Usually, the demand for a normal good goes in the same direction with consumer's income i.e., demand for normal goods is directly related to consumer's income.

Income	Demand
1000	1
2000	2



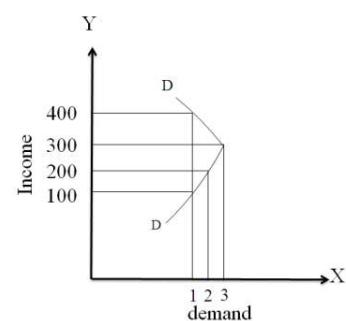
- b) **Perishable goods:** For perishable goods like foods, fruits, meat, vegetables, milk etc., whose life is very short, the quantity demanded raises with an increase in income, but after a certain level it remains constant even though the income raises.

Income	Demand for milk in Kg.
1000	1
2000	2
3000	3
4000	4
5000	4



- c) **Inferior goods:** The goods for which the demand decreases even though the income level increases are inferior goods or cheap good or ordinary goods.

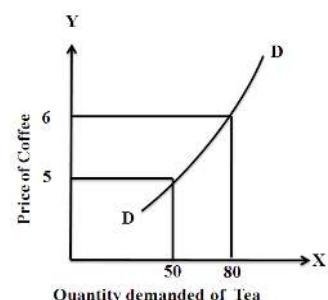
Income (Rs.)	Demand for ordinary ice-cream
100	1
200	2
300	3
400	1



### 3. Prices of related goods:

In a given market, if the price of one good influences the quantity demanded of another good, these two goods are said to be related goods. Two commodities in a given market are related to each other either as Substitutes or Complementary goods.

- a. **Substitutes:** When a want can be satisfied by alternative similar goods, they are said to be substitutes to each other. Ex: Tea and Coffee, Santhoor soap and Lux soap etc. The below graph indicates that as the price of coffee increases, the demand for tea increases.

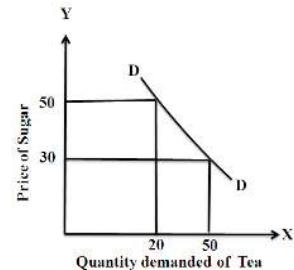


## BEFA UNIT II

Price of Coffee (Rs.)	Demand for Tea
5	50
6	80

There is direct relation between price of coffee and demand for Tea.

- b. **Complementary goods:** When a want can be satisfied by two or more goods in a combination. These goods are termed as complementary goods. In other words, if the price of one good increases, the demand for another good will decrease. Ex: Bread and Butter, Pen and Ink, Car and Petrol, Sugar and Tea and Shoe and Socks etc. The below table and graph indicate the indirect relationship between price of one good and demand for one good.



Price of Sugar (Rs.)	Demand for Tea
30	50
50	20

### 4. Tastes and habits of the Consumers:

Irrespective of price of good and income levels of consumers, demand for many goods depends on consumers' tastes and habits. For example, the demand for ice-creams, chocolates, alcohol, tea, cigarettes etc depend on individual tastes and habits. In cases like, a strict vegetarian does not demand for meat at any price, whereas a non-vegetarian will buy meat at any price.

### 5. Wealth:

The amount demanded of commodity is also affected by the amount of wealth as well as its distribution. The wealthier are the people; higher is the demand for normal commodities. If wealth is more equally distributed, the demand for necessities and comforts is more. On the other hand, if some people are rich, while the majorities are poor, the demand for luxuries is generally higher.

### 6. Population:

Increase in population increases demand for necessities 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. A change in composition of population has an effect on the nature of demand for different commodities.

### 7. 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.

### 8. Expectations regarding the future prices and incomes:

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. Similarly, if consumers expect their incomes to rise in the near future they may increase the demand for a commodity just now.

## **BEFA UNIT II**

### **9. 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.

### **10. State of business:**

The level of demand for different commodities also depends upon the business conditions in the country. If the country is passing through boom conditions, there will be a marked increase in demand. On the other hand, the level of demand goes down during depression.

## **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.

### **Definition Of Elasticity Of Demand:**

In the words of "Marshall", "The elasticity of demand in a market is great or small according as the amount demanded increases much or little for a given fall in the price and diminishes much or little for a given rise 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 four types of elasticity of demand:

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

### **I. Price elasticity of demand:**

Marshall was the first economist to define 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.

$$E_p = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in the price of commodity}}$$

## BEFA UNIT II

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}}$$

$Q_1$  = Old demand  
 $Q_2$  = New demand  
 $p_1$  = Old price  
 $p_2$  = New price

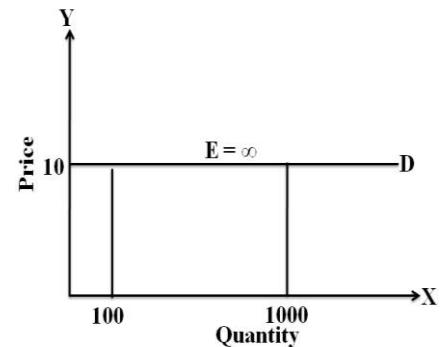
There are five cases of price elasticity of demand

### A. Perfectly elastic demand:

When small change in price leads to an infinitely large change in quantity demanded, it is called perfectly or infinitely elastic demand. In this case  $E=\infty$ . Sometimes, even there is no change in the price, the demand changes in huge quantity. In case of perfect elastic demand, the demand for a commodity changes even though there is no change in price. This elasticity is very rarely found in practice. We can see a straight line demand curve parallel to the X-axis.

Price	Demand
10 (P1)	100 (Q1)
10 (P2)	1000 (Q2)

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{1000 - 100}{100}}{\frac{10 - 10}{10}} = \infty$$



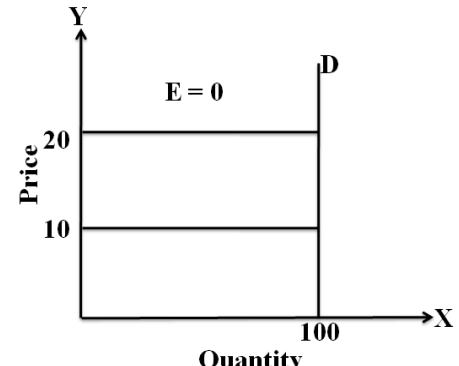
The demand curve is horizontal straight line. It shows that at Rs. 10 price any quantity is demanded and if price increases, the consumer will not purchase the commodity.

### B. Perfectly Inelastic Demand

A commodity is said to have perfectly inelastic demand, when even a large change in price of the commodity causes no change in the quantity demanded. The elasticity coefficient of perfectly inelastic demand is  $E_p = 0$ .

The shape of the demand curve for perfectly inelastic is vertical as shown below.

Price	Demand
10	100
20	100



## BEFA UNIT II

$$E_p = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{100 - 100}{100}}{\frac{20 - 10}{10}} = 0$$

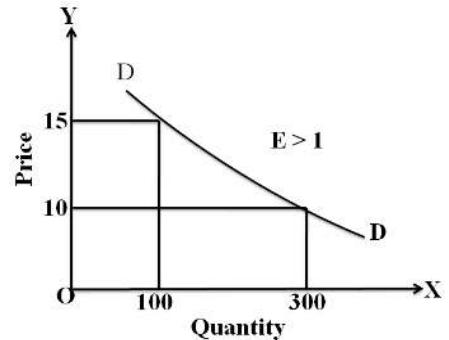
When price increases from Rs. 10 to Rs.20, the quantity demanded remains the same. In other words the response of demand to a change in Price is nil. In this case 'E'=0.

### 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.

Price	Demand
10	300
15	100

$$E_p = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{100 - 300}{300}}{\frac{15 - 10}{10}} = -1.34$$



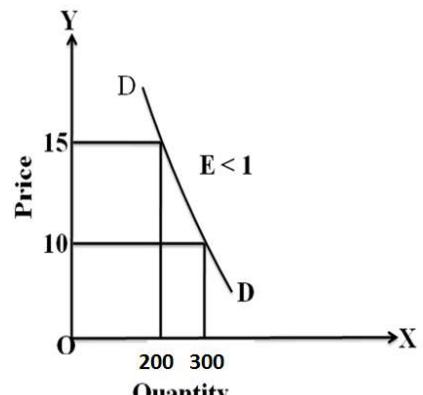
When price increases from Rs.10 to Rs.15, quantity demanded decreases from 300units to 100units which is larger than the change in price.

### 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 quantity demanded. Here  $E < 1$ . Demanded curve will be steeper.

Price	Demand
10	300
15	200

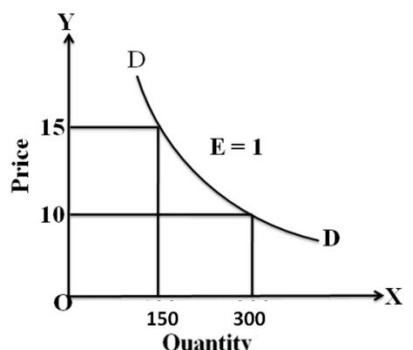
$$E_p = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{200 - 300}{300}}{\frac{15 - 10}{10}} = -0.67$$



When price increases from Rs.10 to Rs.15 quantity demanded decreases from 300units to 200units, which is smaller than the change in price.

### E. Unitary elasticity of demand:

The change in demand is exactly equal to the change in price. When both are equal,  $E=1$  and elasticity is said to be unitary.



## BEFA UNIT II

Price	Demand
10	300
15	150

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{150 - 300}{300}}{\frac{15 - 10}{10}} = -1$$

When price increases from Rs.10 to Rs.15, quantity demanded decreases from 200units to 100units. Thus a change in price has resulted in an equal change in quantity demanded so price elasticity of demand is equal to unity.

### II. 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.

$$E_I = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in the income of the people}}$$

$$E_I = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{I_2 - I_1}{I_1}}$$

$Q_1$  = Old demand  
 $Q_2$  = New demand  
 $I_1$  = Old income  
 $I_2$  = New income

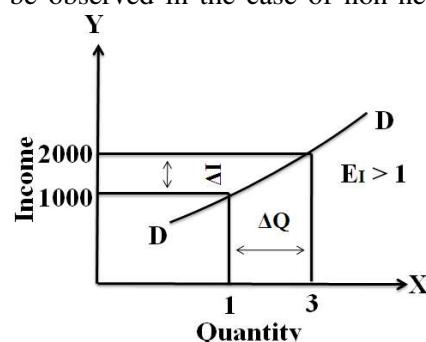
Income elasticity of demand can be classified in to five types.

#### A. High income elasticity of demand:

In this case, an increase in come brings about a more than proportionate increase in quantity demanded. Symbolically it can be written as  $E_I > 1$ . This elasticity can be observed in the case of non-necessary goods such as TV, AC etc.

Income	Demand
1000	1
2000	3

$$E_I = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{I_2 - I_1}{I_1}} = \frac{\frac{3 - 1}{1}}{\frac{2000 - 1000}{1000}} = 2$$



It shows high-income elasticity of demand. When income increases from Rs.1000 to Rs.2000, Quantity demanded increases from 1 unit to 3 units.

## BEFA UNIT II

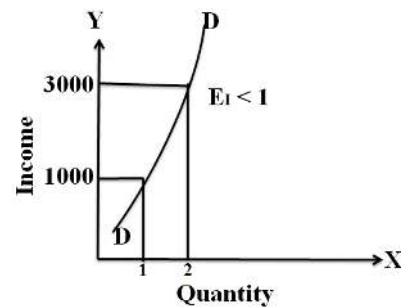
### B. Low income elasticity of demand:

When income increases quantity demanded also increases but less than proportionately. In this case  $E < 1$

1. The necessary goods such as rice, vegetables etc, have this type of elasticity.

Income	Demand
1000	1
3000	2

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{I_2 - I_1}{I}} = \frac{\frac{2 - 1}{1}}{\frac{3000 - 1000}{1000}} = 0.50$$



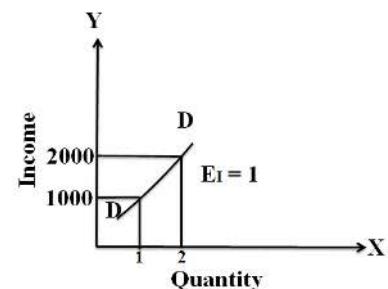
An increase in income from Rs.1000 to Rs.3000, brings an increase in quantity demanded from 1 unit to 2 units, But the increase in quantity demanded is smaller than the increase in income. Hence, income elasticity of demand is less than one.

### C. Unitary income elasticity of demand:

A commodity is said to possess unitary income elasticity of demand, when the percentage change in the quantity demanded of a commodity and the percentage change in the consumer's income are equal. The elasticity coefficient is equal to one. .  $E_I = 1$  and its demand curve is at an angle of  $45^0$  as shown below.

Income	Demand
1000	1
2000	2

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{I_2 - I_1}{I}} = \frac{\frac{2 - 1}{1}}{\frac{2000 - 1000}{1000}} = 1$$

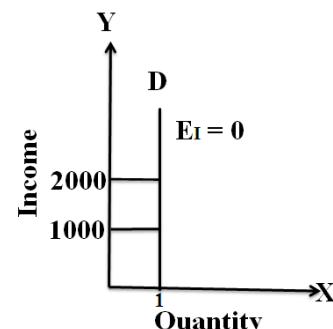


When income increases from Rs. 1000 to Rs.2000, Quantity demanded also increases from 1 unit to 2 units.

### D. Zero income elasticity of demand:

Quantity demanded remains the same, even though money income increases. Symbolically, it can be expressed as  $E_I=0$ . Suppose, even our income increases, we don't purchase medicines in larger quantity. It can be depicted in the following way:

Income	Demand
1000	1
2000	1



## BEFA UNIT II

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{I_2 - I_1}{I}} = \frac{\frac{1 - 1}{1}}{\frac{2000 - 1000}{1000}} = 0$$

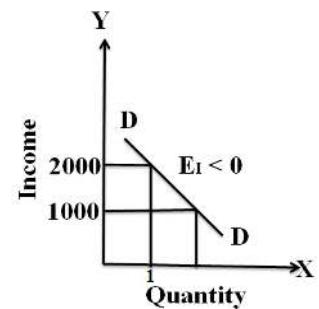
As income increases from OY to OY<sub>1</sub>, quantity demanded never changes.

### E. Negative Income elasticity of demand:

When an increase in consumer's income causes a decrease in the quantity demanded of a commodity and vice-versa, then the commodity is said to have negative income elasticity of demand. Ex: Inferior goods or low quality goods have negative income elasticity because they want to buy high quality goods as income increases. In this case, income elasticity of demand is negative. i.e., EI < 0.

Income	Demand
1000	2
2000	1

$$E_P = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{I_2 - I_1}{I}} = \frac{\frac{1 - 2}{2}}{\frac{2000 - 1000}{1000}} = -0.50$$



When income increases from Rs. 1000 to Rs. 2000, demand falls from 2 units to 1 unit.

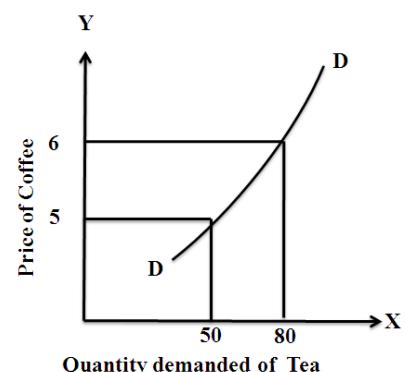
### III. Cross elasticity of Demand:

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:

$$E_C = \text{Cross elasticity} = \frac{\text{Proportionate change in the quantity demand of commodity "X"}}{\text{Proportionate change in the price of commodity "Y"}}$$

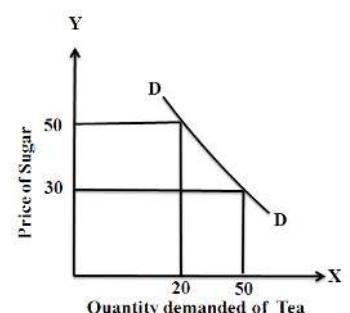
a. **In case of substitutes**, cross elasticity of demand is positive. Eg: Coffee and Tea

When the price of coffee increases, Quantity demanded of tea increases. Both are substitutes.



b. **In case of compliments**, cross elasticity is negative. If an increase in the price of one commodity leads to a decrease in the quantity demanded of another and vice versa.

When price of car goes up, the quantity demanded of petrol decreases. The cross-demanded curve has negative slope.



## BEFA UNIT II

### IV. Advertisement elasticity of demand:

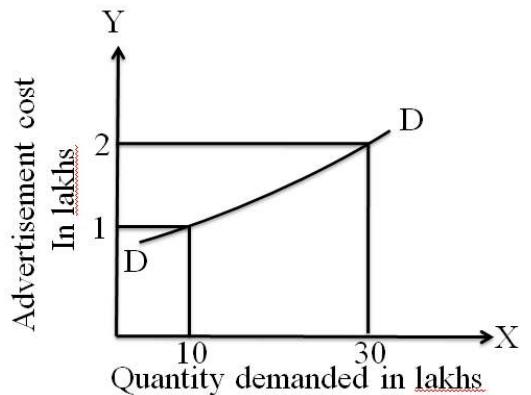
It refers to increase in the sales revenue because of change in the advertising expenditure. In other words, there is a direct relationship between the amount of money spent on advertising and its impact on sales. Advertising elasticity is always positive.

$$E_A = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in advertisement costs}}$$

$$E_A = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{A_2 - A_1}{A_1}}$$

$Q_1$  = Old demand  
 $Q_2$  = New demand

Advertisement cost	Demand
Rs. 1 Lakh	10 Lakh units
Rs. 2 Lakh	30 Lakh units

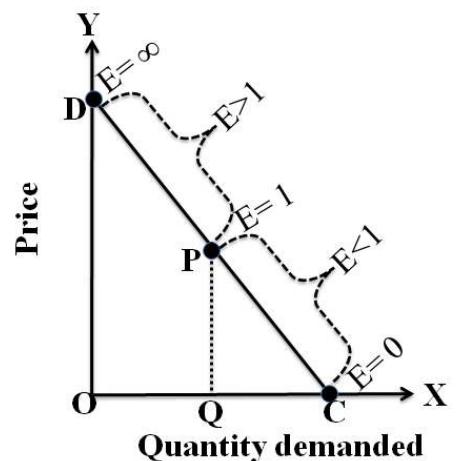


### MEASUREMENT OF ELASTICITY OF DEMAND

#### 1) Point Elasticity of Demand:

Point elasticity is the price elasticity of demand at a specific point on the demand curve instead of over a range of it. A demand curve does not have the same elasticity throughout its entire length. In general, elasticity differs at different points on a given demand curve. Point elasticity does not hold good in the case of perfectly elastic and perfectly inelastic. In these cases, the demand curves possess a single elasticity throughout its entire length.

It can be observed that elasticity at point C where the demand curve touches the X axis is equal to zero and at point D where the demand curve meets the price axis, the elasticity is infinity. At mid point P, the elasticity is equal to one. At all the points between P and C, the elasticity is greater than zero and less than one and at all the points between P and D, the elasticity is higher than one and less than infinity. Thus the range of values of elasticity is between zero and infinity.



## BEFA UNIT II

The following graph simplifies the concept of point elasticity. To calculate point elasticity at any point on the demand curve, the below equation is used. We take mid - point of the demand curve as point C where elasticity is one. When we move to the right direction from point C, elasticity of demand decreases i.e.,  $E < 1$  and elasticity of demand increases i.e.,  $E > 1$ , when we move to the left direction from the point C.

$$Ed = \frac{\text{Right From Mid-Point}}{\text{Left From Mid-Point}}$$

**The elasticity at point C can be calculated as:**

$$Ed = CE/CA = 40/40 = 1$$

**Elasticity at point D can be calculated as under:**

$$Ed = DE/DA = 20/60 = 0.33 \quad (E < 1)$$

**Elasticity at point B can be calculated as under:**

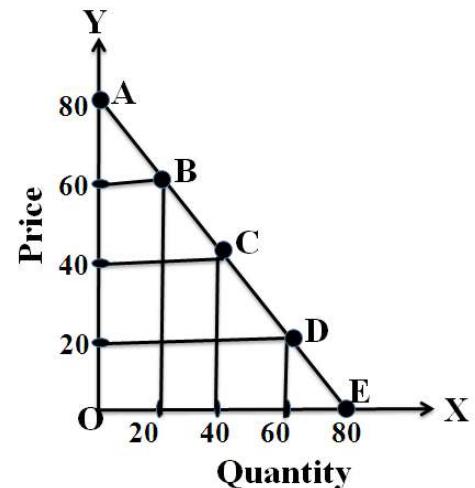
$$Ed = BE/BA = 60/20 = 3 \quad (E > 1)$$

**Elasticity at point A can be calculated as under:**

$$Ed = AE/A = 80/0 = \infty$$

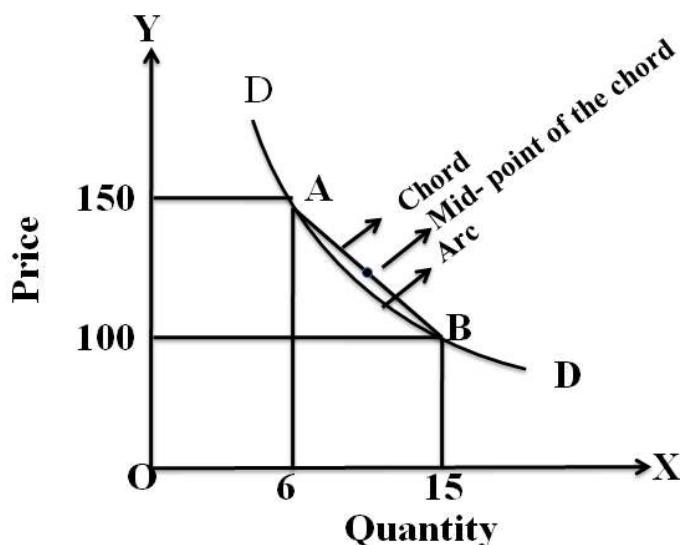
**Elasticity at point E can be calculated as under:**

$$Ed = EA/E = 0/80 = 0$$



### 2) Arc Elasticity or Mid-Point Method:

Arc elasticity of demand is the average elasticity over a segment of the demand curve. In point elasticity, we find elasticity on straight line demand curve. We cannot always find a demand curve in the form of straight line. A demand curve is not linear. So, how do we find elasticity on such a curve?. What we do is that we have to identify two points, say point A and point B and then draw a chord (a straight line joining two points on a curve) between these two points. Join these two points with a straight line. What happens is we get a straight line with arc (a part of a curve). Now, how do we find elasticity between these two points?. We have a formula for that: The following graph presents the clear meaning of the arc elasticity.



Price	Demand
150	6
100	15

$$\text{Elasticity} = \frac{\frac{Q_2 - Q_1}{Q_2 + Q_1}}{\frac{P_2 - P_1}{P_2 + P_1}} = \frac{\frac{15 - 6}{15 + 6}}{\frac{100 - 150}{100 + 150}} = \frac{2}{2} = 2.14$$

## **BEFA UNIT II**

### **FACTORS AFFECTING ELASTICITY OF DEMAND**

Elasticity of demand depends on many factors.

#### ***1. Nature of commodity:***

Elasticity or in-elasticity of demand depends on the nature of the commodity i.e. whether a commodity is a necessity, comfort or luxury, normally; the demand for Necessaries like salt, rice etc is inelastic. On the other hand, the demand for comforts and luxuries is elastic.

#### ***2. Availability of substitutes:***

Elasticity of demand depends on availability or non-availability of substitutes. In case of commodities, which have substitutes, demand is elastic, but in case of commodities, which have no substitutes, demand is in elastic.

#### ***3. Variety of uses:***

If a commodity can be used for several purposes, than it will have elastic demand. i.e. electricity. On the other hand, demanded is inelastic for commodities, which can be put to only one use.

#### ***4. Postponement of demand:***

If the consumption of a commodity can be postponed, than it will have elastic demand. On the contrary, if the demand for a commodity cannot be postpones, than demand is in elastic. The demand for rice or medicine cannot be postponed, while the demand for Cycle or umbrella can be postponed.

#### ***5. Amount of money spent:***

Elasticity of demand depends on the amount of money spent on the commodity. If the consumer spends a smaller for example a consumer spends a little amount on salt and matchboxes. Even when price of salt or matchbox goes up, demanded will not fall. Therefore, demand is in case of clothing a consumer spends a large proportion of his income and an increase in price will reduce his demand for clothing. So the demand is elastic.

#### ***6. Time:***

Elasticity of demand varies with time. Generally, demand is inelastic during short period and elastic during the long period. Demand is inelastic during short period because the consumers do not have enough time to know about the change is price. Even if they are aware of the price change, they may not immediately switch over to a new commodity, as they are accustomed to the old commodity.

## **BEFA UNIT II**

### **7. Range of Prices:**

Range of prices exerts an important influence on elasticity of demand. At a very high price, demand is inelastic because a slight fall in price will not induce the people buy more. Similarly at a low price also demand is inelastic. This is because at a low price all those who want to buy the commodity would have bought it and a further fall in price will not increase the demand. Therefore, elasticity is low at very high and very low prices.

### **SIGNIFICANCE/IMPORTANCE OF ELASTICITY OF DEMAND**

**(or)**

### **ELASTICITY OF DEMAND IN DECISION-MAKING**

The concept of elasticity is very useful to the producers and policy makers alike. It is very valuable tool to decide the extent of increase or decrease in price for a desired change in the quantity demanded for the products and services in the firm or the economy. The practical importance of this concept will be clear from the following application.

#### **1. Price fixation:**

A knowledge of elasticity of demand may help the businessman to make a decision whether to cut or increase, the price of his product or to shift the burden of any additional cost of production on to the consumers by charging high price. 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:**

The elasticity of demand helps the businessman to decide about production. A businessman choose the optimum product mix on the basis of elasticity of demand for various products. The products having more elastic demand are preferred by the businessman. The sale of such products can be increased with a little reduction in their prices. Hence elasticity of demand helps the producers to take correct decision regarding the level of output to be produced.

#### **3. prices of factors of production:**

A factor with an inelastic demand can always command a higher price as compared to a factor relatively elastic demand. This helps the trade unions in knowing that where they can easily get the wage rate increased. Bargaining capacity of trade unions depend upon elasticity of demand for workers services. 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.

## **BEFA UNIT II**

### **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. A country will benefit from international trade when it fixes lower price for exports items whose demand is price elastic and high price for those exports whose demand is inelastic. The demand for imports should be elastic for a fall in price and inelastic for raise in price. The terms of trade between the two countries also depends upon the elasticity of demand of exports and imports. If the demand is inelastic, the terms of trade will be in favour of the seller country. If the demand is elastic, the terms of trade will be in favour of the buyer country.

### **5. Tax policies:**

The government can impose higher taxes and collect more revenue if the demand for the commodity on which a tax is to be levied is inelastic. On the other hand, in case of a commodity with elastic demand high tax rates may fail to bring in the required revenue for the government. 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 of public utilities:**

The nationalization of public utility services can also be justified with the help of elasticity of demand. Demand for public utilities such as electricity, water supply, post and telegraph, public transportation etc., is generally inelastic in nature. If the operation of such utilities is left in the hands of private individuals, they may exploit the consumers by charging high prices. Therefore, in the interest of general public, the government owns and runs such services.

## **DEMAND FORECASTING**

Forecasting is predicting or expecting the needs of the consumers in future. Forecasting the demand for its products is the essential function for an organization irrespective of its nature. Forecasting customer demand for products and services is a proactive process of determining what products are needed, where, when and in what quantities. So, demand forecasting is a customer focused activity. It supports other planning activities such as capacity planning, inventory planning and even overall business planning. Many organizations follow it as a custom to completely and accurately forecast the demand of its products regularly. Demand forecasting is not helpful at the firm level but also at national level. The need for demand forecasting arises due to the following purposes.

- It serves as a road map for production plans.
- It plays a significant role in situations of uncertain production or demand.
- It facilitates the managers to line up their business activities.
- It is a basis for export and import policy and fiscal policy.
- It can help businessman to take decisions regarding inputs of production process such as labor, capital etc.

## **BEFA UNIT II**

### **CHARACTERISTICS OF GOOD DEMAND FORECASTING**

1. It is in terms of specific quantities
  2. It is undertaken in an uncertain atmosphere.
  3. A forecast is made for a specific period of time which would be sufficient to take a decision and put it into action.
  - 4 .It is based on historical information and the past data.
  - 5 .It tells us only the approximate demand for a product in the future.
  - 6 .It is based on certain assumptions.
  - 7 .It cannot be 100% precise as it deals with future expected demand
- Demand forecasting is the activity of estimating the quantity of a product or service that consumers will purchase. Demand forecasting involves techniques including both informal methods, such as educated guesses, and quantitative methods, such as the use of historical sales data or current data from test markets. Demand forecasting may be used in making pricing decisions, in assessing future capacity requirements, or in making decisions on whether to enter a new market.

### **STEPS IN DEMAND FORECASTING**

#### **1. Determining the objectives**

The first step in this regard is to consider the objectives of sales forecasting carefully.

#### **2. Period of forecasting**

Before taking up forecasting, the company has to decide the period of forecasting — Whether it is a short-term forecast or long-term research.

#### **3. Scope of forecast**

The next step is to decide the scope of forecasting— Whether it is for the products, or for a particular area or total industry or at the national/international level.

#### **4. Sub-dividing the task**

Sub-dividing the task into homogeneous groups, according to product, area, activities or consumers. The figure of sales forecasting shall be the sum total of the sales forecasts of all the groups.

#### **5. Identify the variables**

## **BEFA UNIT II**

The different variables or factors affecting the sales should be identified so that due weight age may be given to those different factors.

### **6. Selecting the method**

Appropriate method of sales forecasting is selected by the company taking into account all the relevant information, purpose of forecasting and the degree of accuracy required.

### **7. Collection and analysis of data**

Necessary data for the forecast are collected, tabulated, analyzed and cross-checked. The data are interpreted by applying the statistical or graphical techniques, and then to draw necessary deductions there from.

### **8. Study of correlation between sales forecasts and sales promotion plans**

Making the forecast reliable, the sales promotion plans such as advertising, personal selling and other sales programmes should be reviewed. A study of correlation between sales forecasts and sales promotion plans should be made in order to establish their role in promoting the sales.

### **9. Competitors activities**

Volume of sales of a company is largely affected by the activities of competitors and, therefore, the forecaster must also study the competitors' activities, policies, programmes and strategies.

### **10. Preparing final sales forecasts**

The preliminary sales forecasts figure should be reviewed and final sales forecast figures should be arrived at after making all adjustments.

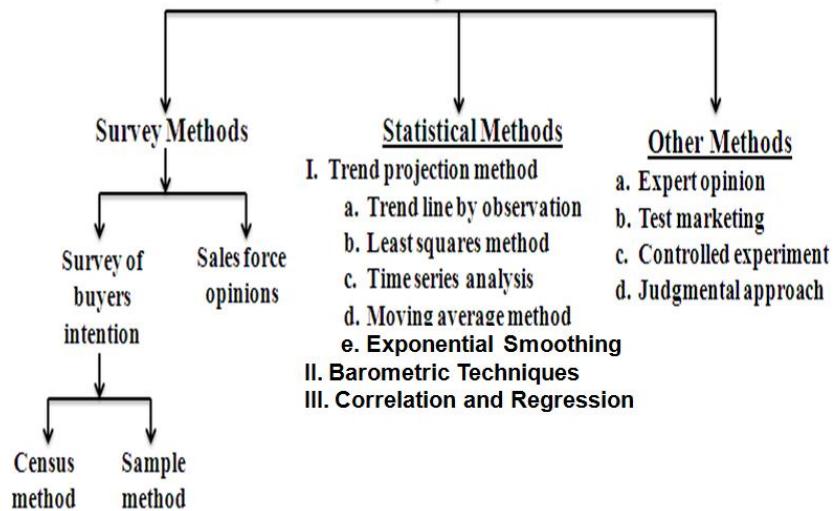
### **11. Evaluation and adjustments**

The figures of final sales forecasts form the basis for the operations of the company in the next period. The actual sales performance in the forthcoming period should be reviewed and evaluated from time to time viz, monthly, quarterly, half-yearly or yearly and so on. The forecast figures should be revised in the light of difficulties experienced during actual performance. At the end of the forecast period, actual performance should be reviewed and rectified while forecasting the demand for the next period.

## BEFA UNIT II

### METHODS OF FORECASTING:

#### **Methods of Demand Forecasting**



Several methods are employed for forecasting demand. All these methods can be grouped under survey method, statistical method and other methods. Survey methods and statistical methods are further subdivided in to different categories.

#### **I. Survey Method:**

##### **A. Survey of buyers 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 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.

###### **1. Census method:**

If the company wishes to elicit the opinion of all the buyers, this method is called census method. This method is not only time-consuming but also costly. Suppose there are 10,000 buyers for a particular product. if the company gets the opinion of all these ten thousand customers, this method is known as census method.

###### **2. Sample method:**

If the company selects a group of buyers who can represent the whole population, this method is called the sample method. A survey of buyers based on sample basis can be completed faster with relatively

## **BEFA UNIT II**

lower cost. Normally a questionnaire is designed to elicit the information. There are specialized organizations to collect the information from the potential buyers, ex: ORG-Marg. Etc.

### **B. Sales force opinions:**

The sales people are those who are in constant touch with the main and large buyers of a particular market, and hence they constitute another valid source of information about the likely sales of a product. The sales force is capable of assessing the likely reactions of the customers of their territories quickly, given the company's strategy. It is less costly as the survey can be conducted instantaneously through telephone, fax or video-conference, and so on. The data thus collected, forms another valid source of reliable information.

## **II. Statistical Methods:**

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

### **A. Trend projection methods**

#### **1. Trend line by observation:**

This method of forecasting trend is elementary, easy and quick as it involves merely the plotting the actual sales data on a chart and then estimating just by observation where the trend line lies. The line can be extended towards a future period and corresponding sales forecast read from the graph.

#### **2. Least squares method:**

Here, certain statistical formulas are used to find the trend line which best fits the available data. It is assumed that there is a proportional change in sales over period of time. In such a case, the trend line equation is in linear form.

The estimating linear trend equation of sales is written as:  $S = x + y(T)$ , where  $x$  and  $y$  have been calculated from past data,  $S$  is sales and  $T$  is the year number for which the forecast is made. To find the values of  $x$  and  $y$ , the following equations have to be used.

$$\begin{aligned}\Sigma S &= Nx + y\Sigma T \\ \Sigma ST &= x\Sigma T + y\Sigma T^2\end{aligned}$$

Where  $S$  is the sales;  $T$  is the year number,  $N$ = number of years.

#### **3. Times series analysis:**

Time series forecasting is the use of a model to predict future values based on previously observed values. The first step in making estimates for the future consists of gathering information from the past. In this connection one usually deals with statistical data which are collected, observed or recorded at successive intervals of time. Such data are generally referred to as time series. Thus when we observe numerical data at different points of time the set of observations is known as time series. It may be noted that any or all

## **BEFA UNIT II**

of the components may be present in any particular series. The components are Secular trend(Long term trend), Seasonal trend , Cyclical trend (periods in the business cycle such as prosperity, decline, depression, improvement), Irregular trend(also called as erratic or accidental or random variations in business). From the following equation future sales can be measured. The constants T,S,C,I. are calculated from past data.

$$Y = T + S + C + I$$

Y = Future sales  
T = Secular trend  
S = Seasonal trend  
C = Cyclical trend  
I = Irregular trend

### **4. Moving average method:**

This method considers that the average of past events determine the future events. As the name itself suggests, under this method, the average keeps on moving depending up on the number of years selected. This method is easy to compute.

### **5. Exponential Smoothing**

It is the most popular technique used for short-run forecasts. Unlike in moving average method, in this method, all time periods are given varying weights. Recent values are given higher weights and distance past values are given lower values. The reason is that the recent past reflects more in nearest future.

The following formula is used for exponential smoothing.

$$\begin{aligned} F_t + 1 &= \alpha A_t + (1 - \alpha) F_t \\ F_t + 1 &= \text{New forecast} \\ \alpha &= \text{Smoothing constant; its value lies between 0 and 1} \\ A_t &= \text{Last period actual value} \\ F_t &= \text{Last period forecast value} \end{aligned}$$

If  $\alpha$  is higher, higher weight is given to the most recent information.  $\alpha$  is calculated on the basis of past data. If there were fluctuations in past data, the  $\alpha$  value is high.

### **C. Barometric techniques:**

Under the barometric technique, one set of data is used to predict another set. In other words, to forecast demand for a particular product or service, use some other relevant indicator (which is known as barometer) of future demand. Ex: The demand for cable TV may be linked to the number of new houses occupied in a given area or demand for new houses in a particular area.

### **D. Regression method:**

In regression method, the demand function for a product is estimated where demand is dependent variable and other variables that determine the demand are independent variables. If only one variable (say, price) affects the demand, then it is called single variable demand function. Thus, simple regression techniques are used. Simple regression refers to studying the relationship between two variables where one is independent and the other is dependent variable. If demand is affected by many variables, then multi-regression techniques are used.

## **BEFA UNIT II**

In this method, the estimation of demand is done through the past data available as well as factors influencing the demand. The dependent (unknown) variable is then forecast based on this estimated equation, for a given value of the independent (known) variable. With the help of the following equation, future sales can be calculated.

$$Y = a + bX$$

a & b values can be calculated with the following equations.

$$\Sigma Y = Na + b\Sigma X$$

$$\Sigma XY = a\Sigma X + b\Sigma X^2$$

Y = Dependent variable  
X = Independent variable (may be income/price, etc.)  
a & b = Constants  
a = Intercept. The intercept is the expected mean value of Y when all X = 0.  
b = Slope of the line. Amount of change in Y due to a unit change in X.

**Suppose:**

$$Y = 0.1 + 0.109 X$$

If X = 200

$$Y = 0.1 + 0.109 (200) = 0.1 + 21.8 = 21.9 \text{ i.e., may be thousands or lakhs } 21,900.$$

### ***III. Other Methods***

#### ***a) Experts opinion:***

Well-informed persons are called experts. Experts constitute yet another source of information. These persons are generally outside experts and they do not have any vested interests in the results of a particular survey.

#### ***b) Test marketing:***

It is likely that opinions given by buyers, salesmen or other experts may be, at times, misleading. This is the reason why most of the manufacturers favour to test their product or service in a limited market as test-run before they launch their products nationwide. Based on the results of test marketing, valuable lessons can be learnt on how consumers react to the given product and necessary changes can be introduced to gain wider acceptability. To forecast the sales of a new product or the likely sales of an established product in a new channel of distribution or territory, it is customary to find test marketing in practice.

#### ***c) Controlled experiments:***

Controlled experiments refer to such exercises where some of the major determinants of demand are manipulated to suit the customers with different tastes and preferences, income groups, and such others. It is further assumed that all other factors remain the same. In this method, the product is introduced with different packages, different prices in different markets or same markets to assess which combination appeals to the customer most.

#### ***d) Judgment approach:***

When none of the above methods are directly related to the given products or services, the management has no alternative other than using its own judgment.

## BEFA UNIT II

### SUPPLY

In economics, we have two forces: the producer, who makes things, and the consumer, who buys them. **Supply** is the producer's willingness and ability to supply a given good at various price points, holding all else constant. An increase in price will increase producers' revenues, so they'll be willing to supply more; a decrease in price will reduce revenues, and so producers will supply less.

Supply refers to the amount of commodity which an individual producer is willing to sell at a given price in a given period of time.

### LAW OF SUPPLY

**Definition:** Law of supply states that other factors remaining constant, price and quantity supplied of a good are directly related to each other. In other words, when the price paid by buyers for a good rises, then suppliers increase the supply of that good in the market.

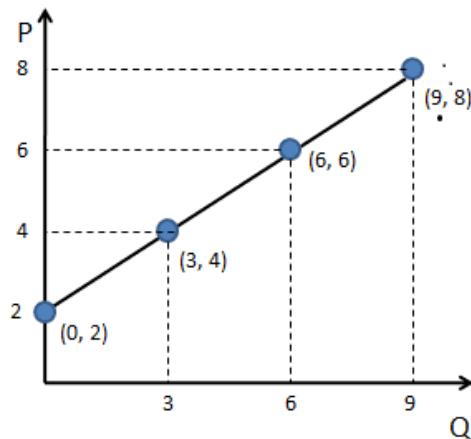
**In the Words of Dooley**, “The law of supply states that other things remaining the same, higher the prices the greater the quantity supplied and lower the prices the smaller the quantity supplied”.

#### Assumption of the Law :

1. It is assumed that incomes of buyers and sellers remain constant.
2. It is assumed that the tastes and preferences of buyers and sellers remain constant.
3. Cost of all the factors of production is also assumed to be constant.
4. It is also assumed that the level of technology remains constant.
5. It is also assumed that the commodity is divisible.
6. Law of supply states only a static situation.

**Description:** Law of supply depicts the producer behavior at the time of changes in the prices of goods and services. When the price of a good rises, the supplier increases the supply in order to earn a profit because of higher prices.

Price (Rs)	Quantity Supplied
2	0
4	3
6	6
8	9



## **BEFA UNIT II**

The above diagram shows the supply curve that is upward sloping (positive relation between the price and the quantity supplied). When the price of the good was at P4, suppliers were supplying Q3 quantity. As the price starts rising, the quantity supplied also starts rising.

### **SUPPLY FUNCTION**

$$Sx = f(px, pf, o \dots \dots \dots T, t, s)$$

The supply function is the mathematical expression of the relationship between supply and those factors that affect the willingness and ability of a supplier to offer goods for sale.

*SX* = Supply of goods X

*PX* = Price of goods X

*PF* = Factor input employed (used) for production.

- Raw material
- Human resources
- Machinery

*O* = Factors outside economic sphere.

*T* = Technology.

*t* = Taxes.

*S* = Subsidies

There is a functional (direct) relationship between price and supply.

### **DETERMINANTS OF SUPPLY**

#### **1. Number of Sellers**

Greater the number of sellers, greater will be the quantity of a product or service supplied in a market and vice versa. Thus increase in number of sellers will increase supply and shift the supply curve rightwards whereas decrease in number of sellers will decrease the supply and shift the supply curve leftwards. For example, when more firms enter an industry, the number of sellers increases thus increasing the supply.

#### **2. Prices of Resources**

Increase in resource prices increases the production costs thus shrinking profits and vice versa. Since profit is a major incentive for producers to supply goods and services, increase in profits increases the supply and decrease in profits reduces the supply. In other words supply is indirectly proportional to resource prices. Increase in resource prices reduces the supply and the supply curve is shifted leftwards whereas decrease in resource prices increases the supply and the supply curve is shifted rightwards.

## **BEFA UNIT II**

### **3. Taxes and Subsidies**

Taxes reduces profits, therefore increase in taxes reduce supply whereas decrease in taxes increase supply. Subsidies reduce the burden of production costs on suppliers, thus increasing the profits. Therefore increase in subsidies increase supply and decrease in subsidies decrease supply.

### **4. Technology**

Improvement in technology enables more efficient production of goods and services. Thus reducing the production costs and increasing the profits. As a result supply is increased and supply curve is shifted rightwards. Since technology in general rarely deteriorates, therefore it is needless to say that deterioration of technology reduces supply.

### **5. Suppliers' Expectations**

Change in expectations of suppliers about future price of a product or service may affect their current supply. However, unlike other determinants of supply, the effect of suppliers' expectations on supply is difficult to generalize. For example when farmers suspect the future price of a crop to increase, they will withhold their agricultural produce to benefit from higher price thus reducing the supply. In case of manufacturers, when they expect the future price to increase, they will employ more resources to increase their output and this may increase current supply as well.

### **6. Prices of Related Products**

Firms which are able to manufacture related products (such as air conditioners and refrigerators) will shift their production to a product the price of which increases substantially related to other related product(s) thus causing a reduction of supply of the products which were produced before. For example a firm which produces cricket bats is usually able to manufacture hockey sticks as well. When the price of hockey sticks increases, the firm will produce more hockey sticks and less cricket bats. As a result, the supply of cricket bats will be reduced.

### **7. Prices of Joint Products**

When two or more goods are produced in a joint process and the price of any of the product increases, the supply of all the joint products will be increased and vice versa. For example, increase in price of meat will increase the supply of leather.

## **BEFA UNIT II**

### **ADDITIONAL IMPORTANT INFORMATION**

#### **TYPES OF DEMAND**

##### **1. Consumer goods demand Vs Producer goods demand**

Consumer goods are those goods which satisfy the human needs. These goods are available for ultimate consumption and give direct satisfaction. Ex: Rice, Bread, Apple etc.

Producer goods are those goods which are used to produce consumer goods and these goods give indirect satisfaction to consumers.

##### **2. Autonomous demand Vs Derived demand**

The direct demand for goods and services is called as autonomous demand. It is independent demand. Ex: The demand for college is autonomous demand.

The demand for goods whose demand depends upon the demand of main goods is called as derived demand. Ex: The demand for canteen food is derived demand. Because, if there is no demand for college, there will be no demand for canteen food.

##### **3. Durable goods demand Vs Perishable goods demand**

Durable goods are those goods which give services for longer period. Ex: TV, Computer, Furniture etc.

Perishable goods are those goods whose life may be in hours or days. Ex: Milk, Bread, Fish etc.

##### **4. Firm demand Vs Industry demand**

The firm is a single business unit. The quantity of goods demanded by a single firm is called firm demand.

Industry refers to the group of companies producing similar goods. The quantity demanded by industry (all companies) is called industry demand. Ex: Demand for computers by one college is called firm demand. Demand for computers by all colleges is called industry demand.

##### **5. Short – run demand Vs Long – run demand**

Short – run refers to shorter duration. In short-run, additional changes cannot be initiated in terms of expansion of the business. In this period, the firm can adjust their production by changing variable factors such as materials and labor. Fixed factors such as capital, technology etc, cannot be changed.

The long-run is a period relatively long so that all factors of production including capital can be adjusted to meet the market requirements.

##### **6. New demand Vs Replacement demand**

New demand refers to the demand for the new products and it is the addition to the existing stock.

In replacement demand, the item is purchased to maintain the asset in good condition.

Ex: The demand for car is new demand and the demand for spare part is called replacement demand.

##### **7. Total Market demand Vs Segment Market demand**

The demand for product in the entire market is called total market. The demand for product in particular location, from particular age group or income group of people is called segment market demand.

Ex: The demand for sugar in entire Telangana state is total market demand for sugar. The demand for sugar in Hyderabad is segment market demand.

## **BEFA UNIT II**

### **FACTORS GOVERNING/INFLUENCING DEMAND FORECASTING**

#### **1. Types of Goods:**

Types of goods affect the demand forecasting process to a larger extent. Goods can be producer's goods, consumer goods, or services. Apart from this, goods can be established and new goods. Established goods are those goods which already exist in the market, whereas new goods are those which are yet to be introduced in the market.

Information regarding the demand, substitutes and level of competition of goods is known only in case of established goods. On the other hand, it is difficult to forecast demand for the new goods. Therefore, forecasting is different for different types of goods.

#### **2. Competition Level:**

Competition level influences the process of demand forecasting. In a highly competitive market, demand for products also depends on the number of competitors existing in the market. Moreover, in a highly competitive market, there is always a risk of new entrants. In such a case, demand forecasting becomes difficult and challenging.

#### **3. Price of Goods:**

Price acts as a major factor that influences the demand forecasting process. The demand forecasts of organizations are highly affected by change in their pricing policies. In such a scenario, it is difficult to estimate the exact demand of products.

#### **4. Level of Technology:**

Level of technology constitutes an important factor in obtaining reliable demand forecasts. If there is a rapid change in technology, the existing technology or products may become obsolete. For example, there is a high decline in the demand of floppy disks with the introduction of compact disks (CDs) and pen drives for saving data in computer. In such a case, it is difficult to forecast demand for existing products in future.

#### **5. Economic Viewpoint:**

Economic view point plays a crucial role in obtaining demand forecasts. For example, if there is a positive development in an economy, such as globalization and high level of investment, the demand forecasts of organizations would also be positive.

#### **6. Time Period of Forecasts:**

Time period acts as a crucial factor that affects demand forecasting. The accuracy of demand forecasting depends on its time period.

##### **a. Short Period Forecasts:**

Refers to the forecasts that are generally for one year and based upon the judgment of the experienced staff. Short period forecasts are important for deciding the production policy, price policy, credit policy, and distribution policy of the organization.

## **BEFA UNIT II**

### **b. Long Period Forecasts:**

Refers to the forecasts that are for a period of 5-10 years and based on scientific analysis and statistical methods. The forecasts help in deciding about the introduction of a new product, expansion of the business, or requirement of extra funds.

### **7. Level of Forecasts:**

Level of forecasts influences demand forecasting to a larger extent. A demand forecast can be carried at three levels, namely, macro level, industry level, and firm level. At macro level, forecasts are undertaken for general economic conditions, such as industrial production and allocation of national income. At the industry level, forecasts are prepared by trade associations and based on the statistical data.

Moreover, at the industry level, forecasts deal with products whose sales are dependent on the specific policy of a particular industry. On the other hand, at the firm level, forecasts are done to estimate the demand of those products whose sales depend on the specific policy of a particular firm. A firm considers various factors, such as changes in income, consumer's tastes and preferences, technology, and competitive strategies, while forecasting demand for its products.

### **8. Nature of Forecasts:**

Nature of forecasts constitutes an important factor that affects demand forecasting. A forecast can be specific or general. A general forecast provides a global picture of business environment, while a specific forecast provides an insight into the business environment in which an organization operates. Generally, organizations opt for both the forecasts together because over-generalization restricts accurate estimation of demand and too specific information provides an inadequate basis for planning and execution.

## **BEFA UNIT III**

### **PRODUCTION**

Production is the transformation or conversion of resources into commodities over time. Economists view production as an activity through which utility is created or enhanced for a product. A firm is a business unit which undertakes the activity of transforming inputs into output of goods and services.



### **FACTORS OF PRODUCTION**

Factors of production is an economic term that describes the inputs that are used in the production of goods or services in order to make an economic profit. The factors of production include land, labor, capital and entrepreneurship. These production factors are also known as management, machines, materials and labor, and knowledge has recently been talked about as a potential new factor of production.

#### **1. Land**

Land is short for all the natural resources available to create supply. It includes raw land and anything that comes from the land. It can be a non-renewable resource.

That includes commodities such as oil and gold. It can also be a renewable resource, such as timber. Once man changes it from its original condition, it becomes a capital good. For example, oil is a natural resource, but gasoline is a capital good. Farmland is a natural resource, but a shopping center is a capital good.

The income earned by owners of land and other resources is called rent.

#### **2. Labour**

Labor is the work done by people. The value of labor depends on workers' education, skills, and motivation. It also depends on productivity. That measures how much each hour of worker time produces in output.

The reward or income for labor is wages.

#### **3. Capital**

Capital is short for capital goods. These are man-made objects like machinery, equipment, and chemicals, that are used in production. That's what differentiates them from consumer goods. For example, capital goods include industrial and commercial buildings, but not private housing. A commercial aircraft is a capital good but a private jet is not.

The income earned by owners of capital goods is called interest.

#### **4. Entrepreneurship**

## **BEFA UNIT III**

Entrepreneurship is the drive to develop an idea into a business. An entrepreneur combines the other three factors of production to add to supply. The most successful are innovative risk-takers.

The income entrepreneurs earn is profits.

### **PRODUCTION FUNCTION**

The production function expresses a functional relationship between physical inputs and physical outputs of a firm at any particular time period. The output is thus a function of inputs. So, production function is an input – output relationship. Mathematically production function can be written as

$$Q = f(L_1, L_2, C, O, T)$$

Here output is the function of inputs. Hence output becomes the dependent variable and inputs are the independent variables.

$Q$ = Output
$f$ = Function of
$L_1$ = Land
$L_2$ = Labour
$C$ = Capital
$O$ = Organization
$T$ = Technology

#### **Definition :**

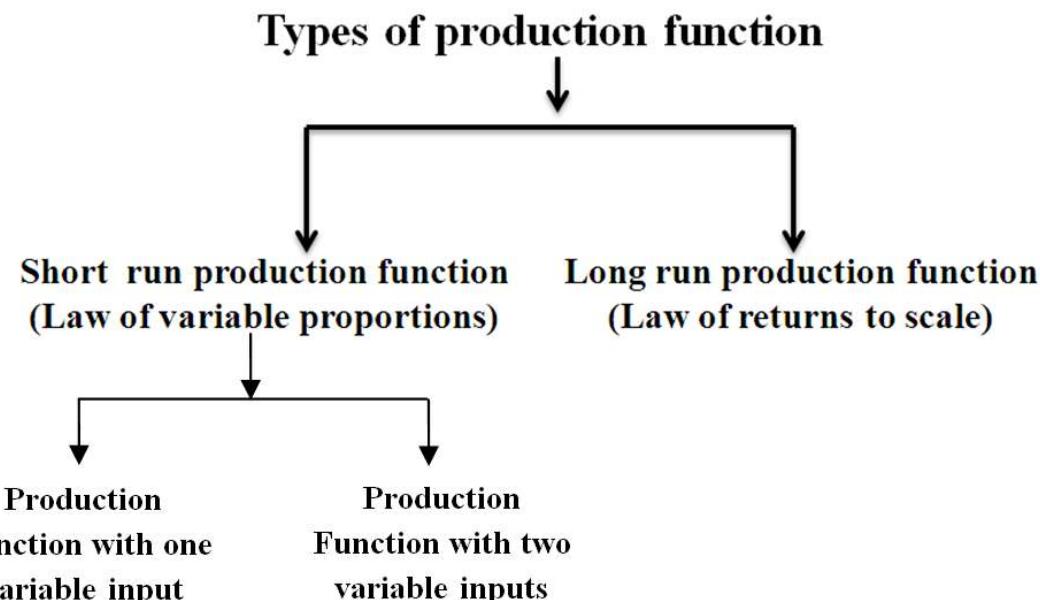
Samuelson defines the production function as “The technical relationship which reveals the maximum amount of output capable of being produced by each and every set of inputs”

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

#### **Assumptions:**

Production function has the following assumptions.

1. The production function is related to a particular period of time.
2. There is no change in technology.
3. The producer is using the best techniques available.
4. The factors of production are divisible.
5. Production function can be fitted to a short run or to long run.



## BEFA UNIT III

### PRODUCTION FUNCTION WITH ONE VARIABLE INPUT

The law of variable proportions which was earlier called as “Law of diminishing returns has played a vital role in the modern economics theory. Assume that a firms’ production function consists of fixed quantities of all inputs (land, equipment, etc.) except labour which is a variable input. If you go on adding the variable input, say, labor, the total output in the initial stages will increase at an increasing rate, and after reaching certain level of 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. This law is of universal nature and it proved to be true in agriculture.

**Assumptions of the Law:** The law is based upon the following assumptions:

1. Only one factor is varied
2. The scale of output is unchanged
3. The technique of production is unchanged
4. All units of factor input varied are homogeneous

#### Three stages of law:

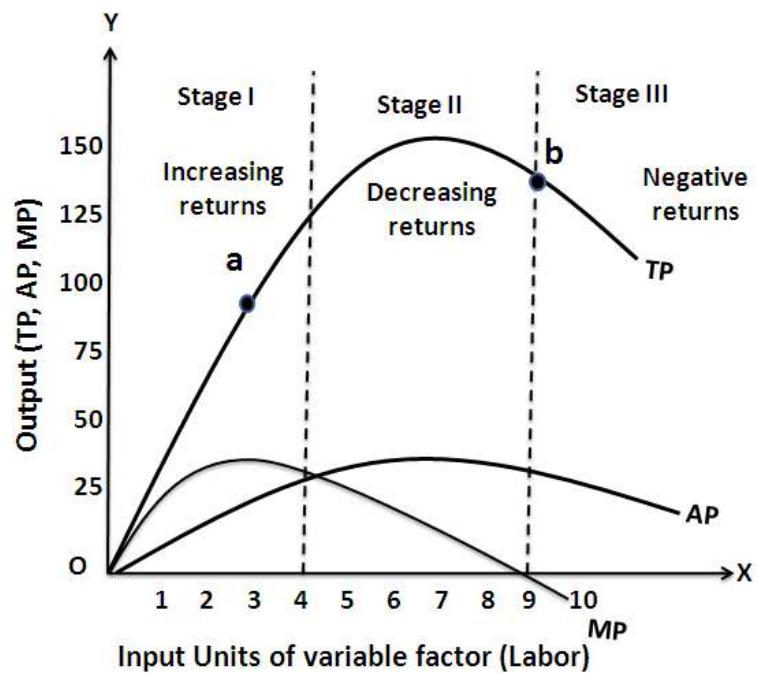
The behaviour of the Output when the varying quantity of one factor is combined with a fixed quantity of the other can be divided into three distinct stages. The three stages can be better understood by following the table.

Production function with one variable input

Fixed Factor (FF) (land)	Variable Factor (VF) (labor)	Total Product (TP)	Average Product (AP)	Marginal Product (MP)
1	1	20	20	20
1	2	50	25	30
1	3	90	30	40
1	4	120	30	30
1	5	135	27	15
1	6	144	24	9
1	7	147	21	3
1	8	148	18.5	1
1	9	148	16.4	0
1	10	145	14.5	-3

To clarify the relationship, the following are measurements of product.

1. **Total product(TP):-** Means the total number of units of output produced per unit of time by all factor inputs.
2. **Average product(AP):-** Is obtained by dividing the total product by the total units of variable factor.
3. **Marginal product(MP):-** is defined as the change in the total product per unit change in the variable input.



	I	II	III
TP	Increases at an increasing rate	Increases at a decreasing rate and becomes maximum	Decreases
AP	Increases and reaches maximum	Decreases	Continuous to decrease
MP	Increases and reaches maximum	Continuous to fall	Becomes negative

## **BEFA UNIT III**

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.

We can sum up the above relationship thus when ‘AP’ is rising, ‘MP’ rises more than ‘AP; When ‘AP’ is maximum and constant, ‘MP’ becomes equal to ‘AP’ when ‘AP’ starts falling, ‘MP’ falls faster than ‘AP’.

Thus, the total product, marginal product and average product pass through three phases, viz., increasing diminishing and negative returns stage. The law of variable proportion is nothing but the combination of the law of increasing and demising returns.

### **PRODUCTION FUNCTION WITH TWO VARIABLE INPUTS**

Isoquants analyse and compare the different combinations of capital & labour and output. The term isoquant has its origin from two words “iso” and “quantus”. ‘iso’ is a Greek word meaning ‘equal’ and ‘quantus’ is a Latin word meaning ‘quantity’. Isoquant therefore, means equal quantity. An isoquant curve is therefore called as iso-product curve or equal product curve or production indifference curve.

Thus, an isoquant shows all possible combinations of two inputs, which are capable of producing equal or a given level of output. Since each combination yields same output, the producer becomes indifferent towards these combinations.

#### **Assumptions:**

1. There are only two factors of production, viz. labour and capital.
2. The two factors can substitute each other up to certain limit
3. The shape of the isoquant depends upon the extent of substitutability of the two inputs.
4. The technology is given over a period.

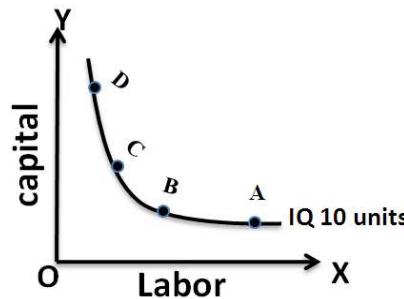
**For example:-** Now the firm can combine labor and capital in different proportions and can maintain specified level of output say, 10 units of output of a product X. It may combine alternatively as follows:

In the below table, combination ‘A’ represent 1 unit of capital and 10 units of labour and produces ‘10’ units of a product. All other combinations in the table are assumed to yield the same given output of a product say ‘10’ 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 a curve called Iso-quant curve as shown below.

## BEFA UNIT III

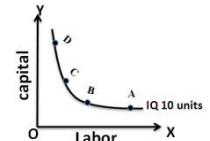
Labour is on the X-axis and capital is on the Y-axis. IQ is the Iso-Quant curve which shows all the alternative combinations A, B, C, D which can produce 10 units of a product.

Combination	Capital	Labor	output
A	1	10	10 units
B	2	6	10 "
C	3	3	10 "
D	4	1	10 "

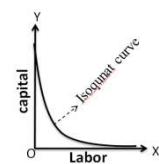


### Features of an ISOQUANT:

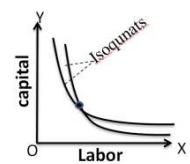
- Downward sloping:-** If one of the inputs is reduced, the other input has to be increased. There is no question of increase in both the inputs to yield a given output.



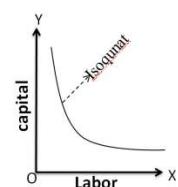
- Don't touch the axes:-** The isoquant touches neither X-axis nor Y-axis, as both inputs are required to produce a given product. If an isoquant is touching the X-axis, it means output is possible even by using a factor (Ex: Labor alone without using capital). But, this is unrealistic.



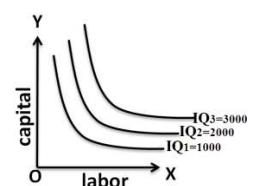
- Don't intersect:-** Iso-quants representing different levels of output never intersect or touch or be tangent to each other. If they intersect to each other, they have a common point on them which means that the same amount of labor and capital produce two different levels of output.



- Convex to origin:-** Isoquants are convex to the origin. It is because the inputs factor are not perfect substitutes. One input factor is substituted by other input factor in a decreasing marginal rate. The convexity of isoquant suggests that MRTS is diminishing which means that as quantities of one factor-labor is increased, the less of another factor-capital will be given up, if output level is to be kept constant.



- Upper isoquants represent higher level of output:-** Each isoquant represents a different quantity of output. Higher isoquants indicate a higher level of output.



## LAW OF RETURNS TO SCALE

The concept of variable proportions is a short-run phenomenon as in these period fixed factors cannot be changed and all factors cannot be changed. On the other hand in the long-term all factors can be changed as made variable. When we study the changes in output when all factors or inputs are changed, we

## BEFA UNIT III

study returns to scale. An increase in the scale means that all inputs or factors are increased in the same proportion. In variable proportions, the cooperating factors may be increased or decreased and one faster (Ex. Land in agriculture (or) machinery in industry) remains constant so that the changes in proportion among the factors result in certain changes in output. In returns to scale, all the necessary factors of production are increased or decreased to the same extent so that whatever the scale of production, the proportion among the factors remains the same.

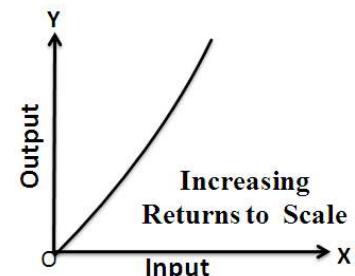
### Assumptions

1. Technique of production is unchanged
2. All units of factors are homogeneous
3. Returns are measured in physical terms

When a firm expands, its scale increases all its inputs proportionally, then technically there are three possibilities.

**1. Law of increasing returns to scale:-** if a proportionate/percentage increase in the output is larger than the proportionate/percentage increase in inputs, there are increasing returns.

**For example:** If a 5% increase in inputs, results in 10% increase in the output, a firm is said to attain increased returns.



$$\text{Production Factor Co-efficient} = \frac{\% \text{ Change in output}}{\% \text{ Change in input}}$$

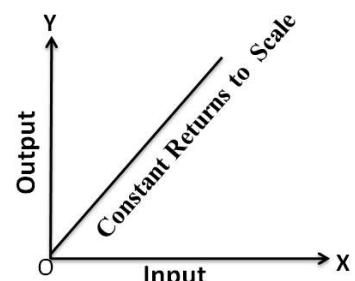
If PFC > 1, it means increasing returns to scale

If PFC = 1, it means constant returns to scale

If PFC < 1, it means decreasing returns to scale

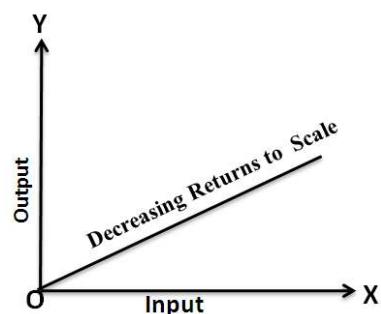
**2. Law of constant returns to scale:-** if the proportionate increase in all the inputs is equal to the proportionate increase in output, then situation of constant returns to scale occurs.

**For Example:-** If the inputs are increased at 10% and if the resultant output also increases a 10% then the organization is said to achieve constant returns to scale.



**3. Law of decreasing returns to scale:-** if the proportionate increase in output is less than the proportionate increase in input, then a situation of decreasing returns to scale occurs.

**For Example:-** If the inputs are increased by 10% and if the resultant output increases only by 5% then the organization is said to achieve decreasing returns to



## BEFA UNIT III

scale.

the following table illustrates these laws clearly.

Capital (in units)	Labor (in units)	% of increase in both inputs	Output (in units)	% of increase in output	Laws applicable
1	3	-	50	-	-
2	6	100	120	140	Law of increasing returns to scale
4	12	100	240	100	Law of constant returns to scale
8	24	100	360	50	Law of decreasing returns to scale

From the above table it is clear that with 1 unit of capital and 3 units of labor, the firm produces 50 units of output. When the inputs are doubled 2 units of capital and 6 units of labor, the output has gone up to 120 units. Thus when inputs are increased by 100%, the output has increased by 140%. That is , output has increased by more than double. This is governed by **law of increasing returns to scale**.

When the inputs are further doubled that is to 4 units of capital and 12 units of labor, the output has gone to 240 units. Thus, when inputs are increased by 100%, the output has increased by 100%. That is, output has doubled. This governed by **law of constant returns to scale**.

When the inputs further doubled, that is, to 8 units of capital and 24 units of labor, the output has gone up to 360 units. Thus, when inputs are increased by 100%, the output has increased by only 50%. This is governed by **law of decreasing returns to scale**.

### DIFFERENT TYPES OF PRODUCTION FUNCTIONS

#### 1. Cobb-Douglas Production Function

This production function was proposed by C. W. Cobb and P. H. Dougles. This famous statistical production function is known as Cobb-Douglas production function. Originally the function is applied on the empirical study of the American manufacturing industry from 1899 to 1922. Cobb – Douglas production function takes the following mathematical form.

$$Q = aL^bK^C$$

$$Q = 1.01L^{0.75}K^{0.25}$$

The above production function shows that 1% change in labor input, capital remaining the same, is associated with a 0.75 percent change in output.

Similarly, 1% change in capital, labor remaining the same, is associated with a 0.25 percent change in output.

$$Q = \text{Total production}/\text{Output}$$

$$a = \text{Total factor productivity}/\text{Multi -factor productivity}$$

(The ratio of output to the sum of associated labor and capital inputs). Productivity is measure of efficiency of labor/machines etc, in converting input into output.

$$\text{Factor productivity} = \frac{\text{Output}}{\text{Factor input}}$$

$$\text{Total Factor Productivity} = \frac{\text{Total Output}}{\text{Total inputs}}$$

**L** = Index of employment of labor = Labour units

**K** = Index of employment of capital = Capital units

**b** = Output elasticity of labor (1% change in labor results in b% change in output)

**c** = Output elasticity of capital (1% change in capital results in c% change in output)

## BEFA UNIT III

### Assumptions:

It has the following assumptions

1. The function assumes that output is the function of two factors viz. capital and labour.
2. It is a linear homogenous production function of the first degree
3. There are constant returns to scale ( $b+c=1$ )
4. All inputs are homogenous
5. There is perfect competition
6. There is no change in technology
7. Both L&K should be positive for Q to exist. If either of these is zero, Q will be zero. This implies that both labor and capital will be combined to get output.

### Simple Cobb-Douglas example:

$$\begin{aligned} Q &= aL^bK^c \\ Q &= 2L^{0.5}K^{0.5} \end{aligned}$$

Let K=100, L=25

$$\begin{aligned} Q &= 2 \times 100^{0.5} \times 25^{0.5} \\ &= 2 \times 10 \times 5 \\ &= 100 \text{ units} \end{aligned}$$

### 1% increase in labor results in 0.5% increase in output:

Labor units after 1% increase =  $100 + (100 \times 1/100) = 101$  units

$$\begin{aligned} Q &= 2L^{0.5}K^{0.5} \\ Q &= 2 \times 101^{0.5} \times 25^{0.5} \\ Q &= 2 \times 10.0498 \times 5 \\ Q &= 100.498 = 100.50 \end{aligned}$$

$$\% \text{ increase in output} = \frac{100.50 - 100}{100} \times 100 = 0.50\%$$

### 2. Leontief Production Function:

Leontief production function, also known as **Fixed Proportion Production Function**, uses fixed proportion of inputs having no substitutability between them. It is regarded as the limiting case for constant elasticity of substitution.

The production function can be expressed as follows:

$$q = \min \left( \frac{z_1}{a}, \frac{z_2}{b} \right)$$

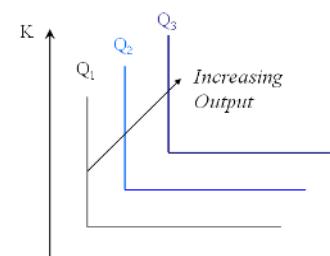
Where, q = quantity of output produced

$Z_1$  = utilized quantity of input 1

$Z_2$  = utilized quantity of input 2

a and b = constants

- $Q = \min \{aK, bL\}$
- Capital and labor are perfect complements and cannot be substituted (no MRTS  $\Leftrightarrow$  no slope)
- Capital and labor are used in fixed-proportions
- Both inputs needed to produce output



For example, tyres and steering wheels are used for producing cars. In such a case, the production function can be as follows:

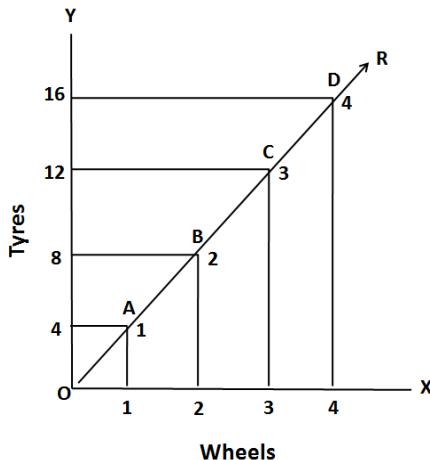
$$Q = \min (z_1/a, z_2/b)$$

$$Q = \min (\text{number of tyres used}, \text{number of steering wheels used}).$$

## **BEFA UNIT III**

Suppose that the inputs "tires" and "steering wheels" are used in the production of a car (for simplicity of the example, to the exclusion of anything else). Then in the above formula  $q$  refers to the number of cars produced i.e., one in our example,  $z_1$  refers to the number of tires used, and  $z_2$  refers to the number of steering wheels used. Assuming that each car is produced with 4 tires and 1 steering wheel, the Leontief production function is

$$\text{Number of cars} = \text{Min}\{\frac{1}{4} \text{ times the number of tires}, 1 \text{ times the number of steering wheels}\}.$$



In the above given figure, OR shows the fixed Tyres-Wheels ratio, if a firm wants to produce 1 car, then 4 tyres and 1 wheel must be used.

Similarly, for the production of 3 cars and 4 cars, 12 tyres and 3 wheel and 16 tyres and 4 wheel must be employed respectively.

### 3. CES Production Function

**Definition:** The Constant Elasticity of Substitution Production Function or CES implies, that any change in the input factors, results in the constant change in the output. In CES, the elasticity of substitution is constant and may not necessarily be equal to one or unity.

In constant elasticity of substitution production function, all the input factors are taken into the consideration such as raw material, technology, labor, capital, etc. The marginal product of one factor increases with the increase in the value of the other factors of production. Also, the marginal product of labor and capital will be positive in case of constant returns to scale.

The constant elasticity of substitution production function can be expressed algebraically as:

$$Q = A[\alpha K^{-\beta} + (1 - \alpha)L^{-\beta}]^{-1/\beta}$$

Where, Q = output, K = Capital and L = Labor

A = efficiency parameter that shows the organizational aspects of production and the state of technology.

The Constant elasticity of substitution production function shows, that any change in the technology or organizational aspects, the production function changes with a shift in the efficiency parameter.

## **BEFA UNIT III**

$\alpha$ = distribution parameter or capital intensity factor coefficient concerned with relative factors in the total output.

$\beta$  = substitution parameter, that determines the elasticity of substitution

The homogeneity of the production function can be determined by the value of the substitution parameter ( $\beta$ ), if it is equal to one, then it is said to be linearly homogeneous i.e. the proportionate change in the input factors results in the increase in the output in the same proportion.

The homogeneity of the production function can be determined by the value of the substitution parameter ( $\beta$ ), if it is equal to one, then it is said to be linearly homogeneous i.e. the proportionate change in the input factors results in the increase in the output in the same proportion.

**For example:**

Consider the following production function.

$$Q = 5K + 10L$$

It means 1 unit K produces 5 units and 2 units of L produce 10 units.

If we assume that, initially  $K = 1$ ,  $L = 2$ , the total output may be obtained by substituting 1 for K and 2 for L in the below equation. Thus,

$$Q_{x1} = 5(1) + 10(2)$$

$$25 = 5 + 20$$

when inputs are doubled (i.e.,  $K = 2$  and  $L = 4$ ). Then,

$$Q_{x2} = 5(1 \times 2) + 10(2 \times 2)$$

$$50 = 10 + 40$$

Thus, the given production functions, when inputs are doubled, the output is also doubled.

## **BEFA UNIT III**

### **TYPES OF COSTS**

Profits are the difference between selling price and cost of production. In general the selling price is not within the control of a firm but many costs are under its control. The firm should therefore aim at controlling and minimizing cost. The various relevant concepts of cost are:

#### **1. Opportunity costs and Outlay costs:**

Opportunity costs refer to the ‘costs of the next best alternative foregone’. We have scarce resources and all these have alternative uses. Where there is an alternative, there is an opportunity to reinvest the resources. In other words, if there are no alternatives, there are no opportunity costs. It is necessary that we should always consider the cost of the next best alternative foregone before committing the funds on a given option. In other words, the benefits from the present option should be more than the benefits of the next best alternative. Opportunity cost is said to exist when the resources are scarce and there are alternative uses for these resources. If there is no alternative, Opportunity cost is zero.

For example: if a firm owns a land, there is no cost of using the land (i.e., the rent) in firm’s account. But the firm has an opportunity cost of using this land, which is equal to the rent foregone by not letting the land out on (the return of second best alternative is regarded as the cost of first best alternative) rent.

Out lay costs are as actual costs which are actually incurred by the firm. These are the payments made for labour, material, plant, building, machinery traveling, transporting etc., These are all those expenses appearing in the books of account, hence based on accounting cost concept.

#### **2. Explicit costs and Implicit costs:**

Explicit costs are also called as out-of-pocket cost that involve cash payments. These are the actual or business costs that appear in the books of accounts. These costs include payment of wages and salaries, payment for raw-materials, interest on borrowed capital funds, rent on hired land, Taxes paid etc.

Implicit costs are also called as imputed costs which don’t involve payment of cash as they are not actually incurred. They would have been incurred had the owner not been in possession of the facilities. Ex: Interest on own capital, saving in terms of salary due to own supervision and rent of own building etc.

#### **3. Historical costs and Replacement costs:**

Historical cost is the original cost that has been originally spent to acquire the asset. of an asset. Historical valuation is the basis for financial accounts.

A replacement cost is the price that is to be paid currently to replace the same asset. A replacement cost is a relevant cost concept when financial statements have to be adjusted for inflation.

#### **4. Short – run costs and Long – run costs:**

Short-run is a period during which the physical capacity of the firm remains fixed. Any increase in output during this period is possible only by using the existing physical capacity more extensively. So short run cost is that which varies with output when the plant and capital equipment are constant.

## **BEFA UNIT III**

Long run is defined as a period of adequate length during which a company may alter all factors of production with high degree of flexibility.

### **5. Out-of pocket costs and Books costs:**

Out-of pocket costs also known as explicit costs are those costs that involve current cash payment such as purchase of raw material, payment of salary rents payment, interest on loan etc.

Book costs also called implicit costs do not require current cash payments. Depreciation, unpaid interest, salary of the owner is examples of back costs.

### **6. Fixed costs, Variable costs and Semi-variable costs:**

Fixed cost is that cost which remains constant for a certain level to output. It is not affected by the changes in the volume of production but fixed cost per unit decreases, when the production is increased. Fixed cost includes salaries, Rent, Administrative expenses depreciations etc.

Variable is that which varies directly with the variation in output. An increase in total output results in an increase in total variable costs and decrease in total output results in a proportionate decrease in the total variables costs. The variable cost per unit will be constant. Ex: Raw materials, labour, direct expenses, etc.

Semi-variable costs refer to such costs that are fixed to some extent beyond which they are variable. Ex: telephone charges, Electricity charges, etc.

### **7. Past costs and Future costs:**

Past costs also called historical costs are the actual cost incurred and recorded in the book of account these costs are useful only for valuation and not for decision making.

Future costs are costs that are expected to be incurred in the future. They are not actual costs. They are the costs forecasted or estimated with rational methods. Future cost estimate is useful for decision making because decision are meant for future.

### **8. Separable costs and Joint costs:**

The costs which can be traced or identified directly with a particular unit, department, or a process of production are called separable costs or direct costs or traceable costs.

The costs which cannot be identified directly with a particular unit, department or a process of the production are called joint costs or indirect costs or common costs. These costs are apportioned among various departments. Ex: Rent, Electricity, Administration salaries, Research and Development expenses etc.

### **9. Avoidable costs and Unavoidable costs:**

Avoidable costs are those costs, which can be reduced if the business activities of a concern are curtailed. For example, if some workers can be retrenched with a drop in production, the wages of the retrenched workers are escapable costs.

## **BEFA UNIT III**

Unavoidable costs are those that are essential for the sustenance of the business activity and hence they have to be incurred.

### **10. Controllable costs and Uncontrollable costs:**

Controllable costs are ones, which can be regulated by the executive who is in charge of it. Direct expenses like material, labour etc. are controllable costs.

Some costs are not directly identifiable with a process or product. They are apportioned to various processes or products in some proportion. These apportioned costs are called uncontrollable costs.

### **11. Incremental costs and Sunk costs:**

Incremental cost also known as differential cost is the additional cost due to a change in the level or nature of business activity. The change may be caused by adding a new product, adding new machinery, replacing a machine by a better one etc.

Sunk costs are those which are not altered by any change – They are the costs incurred in the past. This cost is the result of past decision, and cannot be changed by future decisions. Investments in fixed assets are examples of sunk costs. Once an asset is bought, the funds are blocked forever. They can neither be changed nor controlled.

### **12. Total costs, Average costs and Marginal costs:**

Total cost is the total expenditure incurred for the input needed for production. It may be explicit or implicit. It is the sum total of the fixed and variable costs.

Average cost is the cost per unit of output. It is obtained by dividing the total cost (TC) by the total quantity produced (Q)

Marginal cost is the additional cost incurred to produce an additional unit of output.

### **13. Accounting costs and Economic costs:**

Accounting costs are the costs recorded for the purpose of preparing the profit & loss account and balance sheet to meet the legal, financial and tax purpose of the company. The accounting concept is a historical concept and records what has happened in the past.

Economic cost refers to cost of economic resources used in production including opportunity cost. Economics concept considers future costs and future revenues, which help future planning, and choice, while the accountant describes what has happened, the economics aims at projecting what will happen.

### **14. Urgent costs and Postponable costs:**

Urgent cost are those costs such as raw materials, wages and son, necessary to sustain the productivity.

Postponable costs are those costs which can be conveniently postponed. For example, white washing the building etc.

## **BEFA UNIT III**

### **COST-OUTPUT RELATIONSHIP**

The cost-output relationship plays an important role in determining the optimum level of production. Knowledge of the cost-output relationship helps the manager in cost control, profit prediction, pricing, promotion etc. Output is an important factor, which influences the cost. Considering the period the cost function can be classified as (a) short-run cost function and (b) long-run cost function. In the short run, the costs can be classified into fixed costs and variable costs. The cost-output relationship in the short run is governed by certain restrictions in terms of fixed costs whereas in the long run, the cost-output relationship studies the effect of varying the size of plants upon its cost.

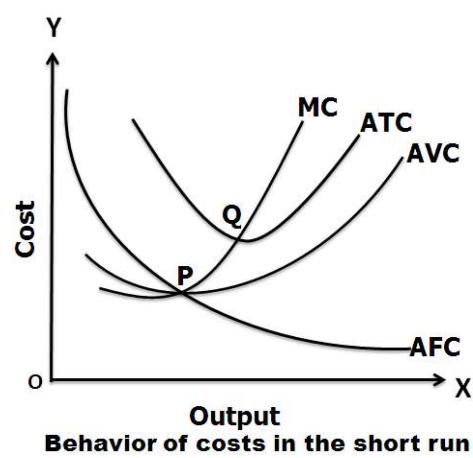
#### **I. Short-run Cost Function:**

Under short run cost-output relation, costs in short run are classified into fixed costs and variable costs. Labour is the variable factor while capital is the fixed factor. Total fixed cost remains constant while variable cost changes with the variation in units of labour. 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, total variable cost. The below table explains the behavior of costs in the short run. From the below it is clear that:

**Cost – Output relationship**

Output(Q) (Units)	Total fixed cost TFC (Rs)	Total variable cost TVC (Rs)	Total cost (TFC + TVC) TC (Rs)	Average variable cost (TVC / Q) AVC (Rs)	Average fixed cost (TFC / Q) AFC (Rs)	Average Total cost (TC/Q) AC (Rs)	Marginal cost MC (Rs)
0	-	-	60	-	-	-	-
1	60	20	80	20	60	80	20
2	60	36	96	18	30	48	16
3	60	48	108	16	20	36	12
4	60	64	124	16	15	31	16
5	60	90	150	18	12	30	26
6	60	132	192	22	10	32	42

- Total fixed costs remain fixed irrespective of increase or decrease in production activity.
- Average fixed cost per unit declines as the volume of production increases. As production increases, the fixed costs are spread over a great number of units. There is inverse relationship between average fixed cost and volume of production.
- The total variable cost increases proportionately with production. But, the rate of increase is not constant.
- The total cost increases with the volume of production.
- The average total cost decreases up to certain level of production. After this level, it rises steeply. It results in flat U-shaped curve. The lowest point of AFC curve denotes the ideal level of production.
- Marginal cost is the change in total cost due to one unit change in output.



## **BEFA UNIT III**

The short-run cost-output relationship can be shown graphically as follows.

- From this graph, it is noticed that as the production increases, the AFC will continue to decrease. Hence, the AFC curve will slope downwards and it appears to meet the X axis but it never meets the X axis.
- The AVC curve is U-shaped curve indicating that the AVC curve tends to fall in the beginning when output increases but after a particular level of output, it rises because of the application of law of returns or law of variable proportions or law of diminishing returns.
- The ATC curve initially declines and then rises upward. As long as AVC declines the ATC will also decline.
- MC is the change in total cost resulting from a unit change in output. It decreases up to certain level of output but later rises steeply.

### **II. Long-run Cost Function:**

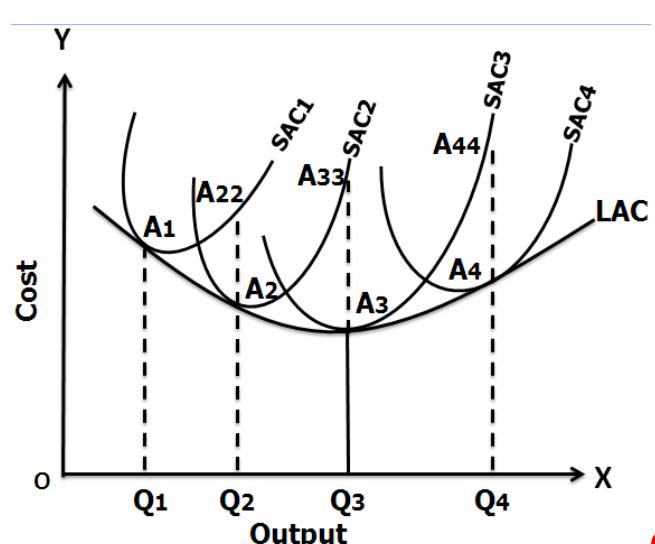
Long run refers to that period of time over which all factors are variable. It has no fixed cost. Over a long period, the size of the plant can be changed, unwanted buildings can be sold staff can be increased or reduced. The long run enables the firms to expand and scale of their operation by bringing or purchasing larger quantities of all the inputs. Thus in the long run all factors become variable.

In the long run a firm has a number of alternatives in regards to the scale of operations. For each scale of production or plant size, the firm has an appropriate short-run average cost curves. The short-run average cost (SAC) curve applies to only one plant whereas the long-run average cost (LAC) curve takes in to consideration many plants.

If we assume that there are many plant sizes, each suitable for a certain level of output, we will get many SAC curves intersecting each other. As the number of plant sizes increases, the points of intersection of SAC curve will come closer. And, if we assume that there are large number (say, infinite number) of plant sizes the intersection points will be so near to each other that we get almost a continuous curve. Thus continuous curve is known as the Long-run Average Cost (LAC) curve or the Envelope curve (as it envelopes the family of short-run Average Cost Curves).

The long-run cost-output relationship is shown graphically with the help of ‘LCA’ curve.

The above figure shows how LAC curve envelopes several short-run average cost (SAC) curves. Suppose, the firm is producing an output of OQ<sub>1</sub> units on a plant of SAC<sub>1</sub>, if it wants to produce O Q<sub>2</sub> units of output, either it can operate on SAC<sub>1</sub> by over utilizing SAC<sub>1</sub> plant or by acquiring a bigger size plant SAC<sub>2</sub> and operate on it. It will be less costly to operate on SAC<sub>2</sub>. If it wants to produce O Q<sub>3</sub> units of output, it can operate on the bigger size plant SAC<sub>3</sub> at least cost. Q<sub>3</sub>A<sub>3</sub> is the least cost at the output OQ<sub>3</sub> and the firm attains optimum



## **BEFA UNIT III**

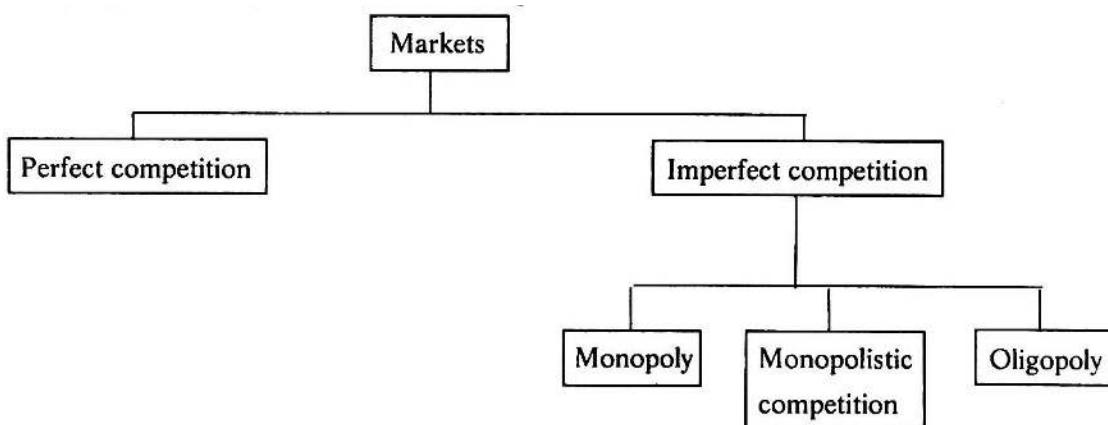
output in the long-run at OQ3 level of output. If it operates on SAC2 to produce OQ3 units of output, the cost will be prohibitively high being Q3A33. It is to be noted that there is only one short-run average cost curve SAC3 which is tangential to the long-run average cost curve at its minimum point. All other SAC curves are tangential to the LAC curves at higher than their minimum average cost points.

### **MARKET**

Market is a place where buyer and seller meet, goods and services are offered for the sale and transfer of ownership occurs. A market may be also defined as the demand made by a certain group of potential buyers for a good or service. The former one is a narrow concept and later one is a broader concept. Economists describe a market as a collection of buyers and sellers who transact over a particular product or product class (the housing market, the clothing market, the grain market etc.). For business purpose we define a market as people or organizations with wants (needs) to satisfy, money to spend, and the willingness to spend it. Broadly, market represents the structure and nature of buyers and sellers for a commodity/service and the process by which the price of the commodity or service is established. In this sense, we are referring to the structure of competition and the process of price determination for a commodity or service. The determination of price for a commodity or service depends upon the structure of the market for that commodity or service (i.e., competitive structure of the market). Hence the understanding on the market structure and the nature of competition are a pre-requisite in price determination.

#### **Different Market Structures**

Market structure describes the competitive environment in the market for any good or service. A market consists of all firms and individuals who are willing and able to buy or sell a particular product. This includes firms and individuals currently engaged in buying and selling a particular product, as well as potential entrants. The determination of price is affected by the competitive structure of the market. This is because the firm operates in a market and not in isolation. In making decisions concerning economic variables it is affected, as are all institutions in society by its environment.



## **BEFA UNIT III**

### **PERFECT COMPETITION**

Perfect competition refers to a market structure where competition among the sellers and buyers prevails in its most perfect form. In a perfectly competitive market, a single market price prevails for the commodity, which is determined by the forces of total demand and total supply in the market.

#### **Characteristics Of Perfect Competition**

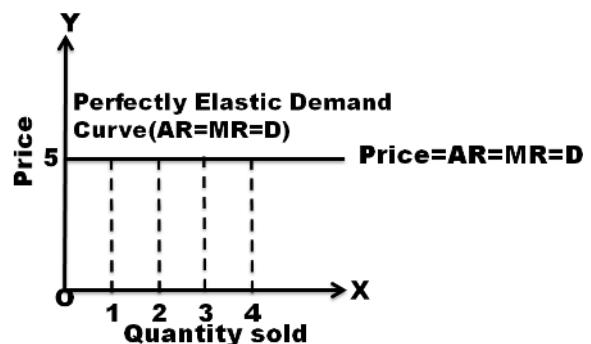
The following features characterize a perfectly competitive market:

- a) **A large number of buyers and sellers:** The number of buyers and sellers is large and the share of each one of them in the market is so small that none has any influence on the market price.
- b) **Homogeneous product:** The product of each seller is totally undifferentiated from those of the others.
- c) **Free entry and exit:** Any buyer and seller is free to enter or leave the market of the commodity.
- d) **Perfect knowledge:** All buyers and sellers have perfect knowledge about the market for the commodity.
- e) **Indifference:** No buyer has a preference to buy from a particular seller and no seller to sell to a particular buyer.
- f) **Non-existence of transport costs:** Perfectly competitive market also assumes the non-existence of transport costs.
- g) **Perfect mobility of factors of production:** Factors of production must be in a position to move freely into or out of industry and from one firm to the other.

#### **Perfect competition: The individual firm**

AR(Average revenue) curve and MR(Marginal Revenue) curve under perfect competition becomes equal to D(Demand) curve and it would be a horizontal line or parallel to the X-axis. The curve simply implies that a firm under perfect competition can sell as much quantity as it likes at the given price determined by the industry i.e. a perfectly elastic demand curve.

<b>Price=AR=MR=D</b>				
<b>Quantity Q</b>	<b>Price P</b>	<b>Total Revenue TR</b>	<b>Average Revenue AR</b>	<b>Marginal Revenue MR</b>
1	5	5	5	5
2	5	10	5	5
3	5	15	5	5
4	5	20	5	5



**Fig: Demand curve for the firm in perfect competition**

#### **Perfect competition: The firm and the industry**

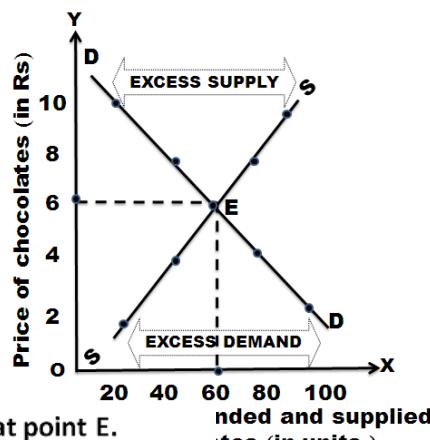
Price is determined by the market forces, that is, demand and supply for a given product or service. As discussed above, firms have no control over the prices they charge for their products. The ultimate price that determines the quantity demanded is equal to the quantity supplied. This price is also called equilibrium price, as it balances the forces of demand and supply. The figure shows how the price is determined. DD is the demand curve and SS is the supply curve. Rs. 6 is the price at which DD and SS intersect each other. At Rs. 6, 60 units are supplied and demanded.

If the price increases to Rs.8, supply will also increase and hence the price is likely to fall down.

## BEFA UNIT III

If the price decreases to Rs. 4, supply will decrease and hence the price is likely to go up.

Price <b>P</b>	Qty. Demanded <b>D</b>	Qty. Supplied <b>S</b>	
<b>2</b>	<b>100</b>	<b>20</b>	
<b>4</b>	<b>40</b>	<b>80</b>	
<b>6</b>	<b>60</b>	<b>60</b>	<b>Equilibrium state</b>
<b>8</b>	<b>40</b>	<b>80</b>	
<b>10</b>	<b>20</b>	<b>100</b>	



- Market equilibrium is determined at point E.
- Equilibrium price is determined at Rs. 6.
- Equilibrium quantity is determined at 60 chocolates.

### Price-Output Determination Under Perfect Competition

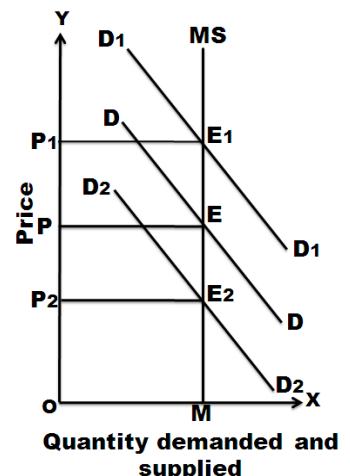
In this market, the price is determined by supply and demand forces. Marshal who propounded the theory says that the price is determined by the equilibrium between demand and supply.

The pricing of commodity under perfect competition can be determined in three periods of time.

#### a) Very short period (Market Period)

Market period is too short period to increase the supply. The market period is so short that supply of the commodity is limited to existing stock. During the market period, say a single day, the supply of a commodity is perfectly inelastic.

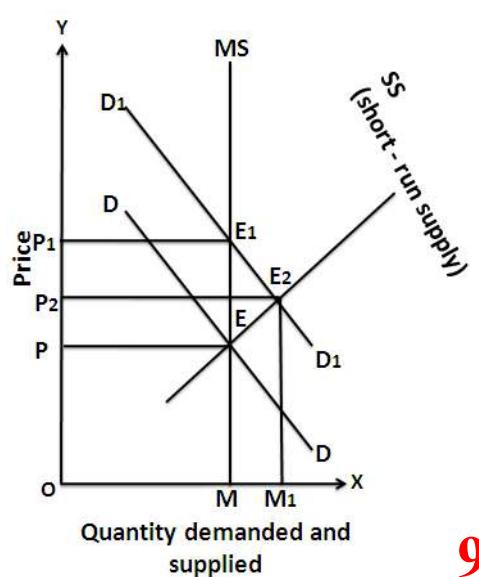
In this figure quantity is represented along X-axis and price is represented along Y-axis. MS is the very short period supply curve. DD is demand curve. It intersects supply curve at E. The price is OP. The quantity is OM. D1 D1 represents increased demand. This curve cuts the supply curve at E1. Even at the new equilibrium, supply is OM only. But price increases to OP1. So, when demand increases, the price will increase but not the supply. If demand decreases new demand curve will be D2 D2. This curve cuts the supply curve at E2. Even at this new equilibrium, the supply is OM only. But price falls to OP2. Hence in very short period, given the supply, it is the change in demand that influences price. The price determined in a very short period is called Market Price.



#### b) Short Period

Short period is not too long period to install new capital equipments. It is also not sufficient period to permit the new firms to enter the industry to increase the supply of the commodity in the market. Hence the firm can increase the supply of a commodity in the short period only by making intensive use of the given plants and equipments and increasing the units of variable factors.

As a result of this, the short period supply of a commodity will be relatively less elastic.



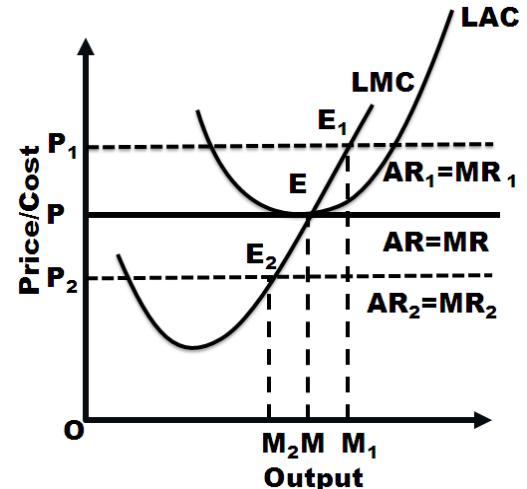
## BEFA UNIT III

In the diagram MS is the market period supply curve. DD is the initial demand curve. It intersects MS curve at E. The price is OP and output OM. Suppose demand increases, the demand curve shifts upwards and becomes D1D1. In the very short period, supply remains fixed on OM. The new demand curve D1D1 intersects MS at E1. The price will rise to OP1. This is what happened in the very short-period.

As the price rises from OP to OP1, firms expand output. As firms can vary some factors but not all, the law of variable proportions operates. This results in new short-run supply curve SS. It intersects D1 D1 curve at E2. The price will fall from OP1 to OP2.

### c) Long Period

In Long run, the Firm's output (supply) can be changed by both the variable factors and fixed factors i.e. all factors become variable. There is enough time for new Firms to enter the Industry. Further, if the demand is increased, the supply can be increased or decreased according to the demand. For Long run equilibrium, long run marginal cost (LMC) is equal to MR and LMC curve cut the MR curve from below. In case of long run equilibrium, all the firms will earn only normal profits.



Take the case when the Firm earn super-normal profit-Then the existing Firm will increase their production and new Firm will enter the Industry. Consequently, the total supply will increase and price fall down and further results in normal profit for the firm

On the contrary, if the firm is incurring losses, Then some Firm will leave the Industry which will reduce the total supply. And due to decrease in supply, price will rise and once again Firm will begin to earn normal profit. Firm equilibrium is at the minimum point of its LAC and at this point the Firm will get the normal profits. If AR (price) rises to OP<sub>1</sub>, then Firm's LMC cuts its MR<sub>1</sub> at E<sub>1</sub> and the firm gets super-normal profit but again come to OP yielding normal profits as stated before. And at price OP<sub>2</sub>, firm incurs losses but again rise to level OP to maintain the equilibrium at normal profit

Firm's equilibrium: MC=MR=AR= min LAC

## MONOPOLY

'mono' means single and 'poly' means seller. The term monopoly refers to that market in which a single firm controls the whole supply of a particular product which has no close substitutes. Monopoly emerges in firms such as transport, water and electricity supply etc.

### Features:

- 1. Single person or a firm:** A single person or a firm controls the total supply of the commodity. There will be no competition for monopoly firm. The monopolist firm is the only firm in the whole industry.
- 2. No close substitute:** The goods sold by the monopolist shall not have close substitutes. Even if price of monopoly product increases, people will not go in far substitute. For example: If the price of electric bulb increases slightly, consumer will not go in for kerosene lamp.
- 3. Large number of Buyers:** Under monopoly, there may be a large number of buyers in the market who compete among themselves.
- 4. Price Maker:** Since the monopolist controls the whole supply of a commodity, he is a price-maker, and then he can alter the price.

## BEFA UNIT III

5. **Supply and Price:** The monopolist can fix either the supply or the price. He cannot fix both. If he charges a very high price, he can sell a small amount. If he wants to sell more, he has to charge a low price. He cannot sell as much as he wishes for any price he pleases.
6. **Downward Sloping Demand Curve:** The demand curve (average revenue curve) of monopolist slopes downward from left to right. It means that he can sell more only by lowering price.

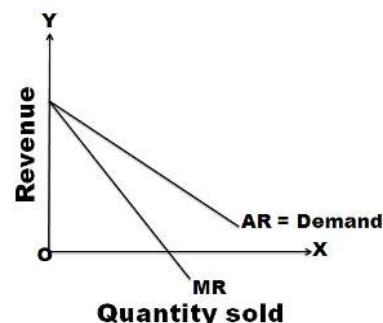
Monopoly refers to a market situation where there is only one seller. He has complete control over the supply of a commodity. He is therefore in a position to fix any price. Under monopoly there is no distinction between a firm and an industry. This is because the entire industry consists of a single firm.

Being the sole producer, the monopolist has complete control over the supply of the commodity. He has also the power to influence the market price. He can raise the price by reducing his output and lower the price by increasing his output. Thus he is a price-maker. He can fix the price to his maximum advantages. But he cannot fix both the supply and the price, simultaneously. He can do one thing at a time. If he fixes the price, his output will be determined by the market demand for his commodity. On the other hand, if he fixes the output to be sold, its market will determine the price for the commodity. Thus his decision to fix either the price or the output is determined by the market demand.

The market demand curve of the monopolist (the average revenue curve) is downward sloping. Its corresponding marginal revenue curve is also downward sloping. But the marginal revenue curve lies below the average revenue curve as shown in the figure. The monopolist faces the down-sloping demand curve because to sell more output, he must reduce the price of his product. The firm's demand curve and industry's demand curve are one and the same. The average cost and marginal cost curve are U shaped curve. Marginal cost falls and rises steeply when compared to average cost.

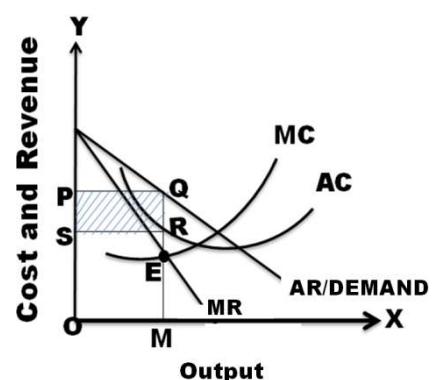
Under monopoly, demand curve is average revenue curve.

Qty	AR/Price	TR	MR
1	8	8	8
2	6	12	4
3	4	12	0
4	2	8	-4
5	0	0	-8



### Price-Output Determination Under Monopoly

The monopolistic firm attains equilibrium when its marginal cost becomes equal to the marginal revenue. The monopolist always desires to make maximum profits. He makes maximum profits when  $MC=MR$ . He does not increase his output if his revenue exceeds his costs. But when the costs exceed the revenue, the monopolist firm incurs losses. Hence the monopolist curtails his production. He produces up to that point where marginal cost is equal to the marginal revenue ( $MR=MC$ ). Thus, the point is called equilibrium point. The price output determination under monopoly may be explained with the help of a diagram.



## **BEFA UNIT III**

In the diagram, the quantity supplied or demanded is shown along X-axis. The cost or revenue is shown along Y-axis. AC and MC are the average cost and marginal cost curves respectively. AR and MR curves slope downwards from left to right. AC and MC are U shaped curves. The monopolistic firm attains equilibrium when its marginal cost is equal to marginal revenue ( $MC=MR$ ). Under monopoly, the MC curve may cut the MR curve from below or from a side. In the diagram, the above condition is satisfied at point E. At point E,  $MC=MR$ . The firm is in equilibrium. The equilibrium output is OM. Up to OM output, MR is greater than MC and beyond OM, MR is less than MC. Therefore, the monopolist is will be in equilibrium at output OM where  $MR=MC$  and profits are maximized.

The above diagram (Average revenue) = MQ or OP

Average cost = MR

Profit per unit = Average Revenue-Average cost=MQ-MR=QR

Total Profit = QR x SR=PQRS

If  $AR > AC$ ; Abnormal or super normal profits.

If  $AR = AC$ ; Normal Profit

If  $AR < AC$  ; Loss

## **MONOPOLISTIC COMPETITION**

Perfect competition and pure monopoly are rare phenomena in the real world. Instead, almost every market seems to exhibit characteristics of both perfect competition and monopoly. Hence, in the real world, it is the state of imperfect competition lying between these two extreme limits that work. Edward. H. Chamberlain developed the theory of monopolistic competition, which presents a more realistic picture of the actual market structure and the nature of competition.

### **Features/Characteristics**

The important characteristics of monopolistic competition are:

- 1. Existence of Many firms:** Industry consists of a large number of sellers, each one of whom does not feel dependent upon others. Every firm acts independently without bothering about the reactions of its rivals. The size is so large that an individual firm has only a relatively small part in the total market, so that each firm has very limited control over the price of the product. As the number is relatively large, it is difficult for these firms to determine its price- output policies without considering the possible reactions of the rival forms. A monopolistically competitive firm follows an independent price policy.
- 2. Product Differentiation:** product differentiation is the essential feature of monopolistic competition. Products can be differentiated by means of unique facilities, advertising, brand loyalty, packing, pricing, terms of credit, superior maintenance service, convenient location and so on. Through heavy advertisement budgets, Pepsi and Coca-Cola make it very expensive for a third competitor to enter the cola market on such a big scale. The following example illustrate how the firms differentiate themselves from others in a monopolistic environment.
  - In hotel industry, some hotels have spacious swimming pools, gyms, cultural programs etc. The customers who value these facilities don't bother about price changes.
  - The colleges who provide best infrastructure and placements in various reputed companies have demand from the student community irrespective of an increase in tuition fee.
  - Cell phones which have unique features have demand from the public even price increases.

## **BEFA UNIT III**

3. **Large Number of Buyers:** There are large number of buyers in the market. But the buyers have their own brand preferences. So, the sellers are able to exercise a certain degree of monopoly over them. Each seller has to plan various incentive schemes to retain the customers who patronize his products.
4. **Free Entry and Exist of Firms:** As in the perfect competition, in the monopolistic competition too, there is freedom of entry and exit. That is, there is no barrier as found under monopoly.
5. **Selling costs:** Since the products are close substitutes, much effort is needed to retain the existing consumers and to create new demand. So, each firm has to spend a lot on selling cost, which includes cost on advertising and other sale promotion activities.
6. **Imperfect Knowledge:** Imperfect knowledge about the product leads to monopolistic competition. If the buyers are fully aware of the quality of the product, they cannot be influenced much by advertisement or other sales promotion techniques.
7. **The Group:** Under perfect competition, the term industry refers to all collection of firms producing a homogenous product. But under monopolistic competition, the products of various firms are not identical though they are close substitutes.

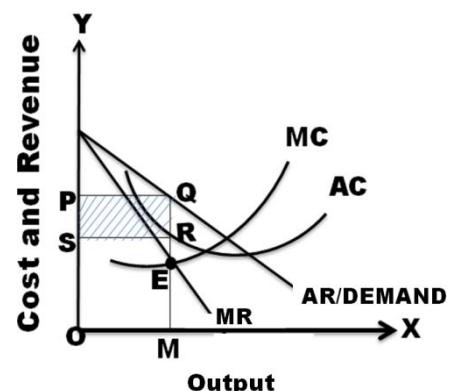
### **Price – Output Determination Under Monopolistic Competition**

Under monopolistic competition, Since different firms produce different varieties of products, different prices for them will be determined in the market depending upon the demand and cost conditions. Each firm will set the price and output of its own product. Here also the profit will be maximized when marginal revenue is equal to marginal cost( $MR=MC$ ). The demand curve for the firm in case of monopolistic competition is just similar to that of monopoly.

The degree of elasticity of demand of a firm in monopolistic competition depends upon the extent to which the firm can resort to product differentiation. The greater the ability of the firm to differentiate the product, the less elastic the demand is. The firm's influence to increase the price depends upon the extent to which it can differentiate the product.

#### a) **Short-run**

In the short-run, the firm is in equilibrium when marginal Revenue = Marginal Cost. In the figure, AR is the average revenue curve. MR marginal revenue curve, MC marginal cost curve, AC average cost curve, MR and MC intersect at point E where output is OM and price MQ (i.e. OP). Thus, the equilibrium output is OM and the price is MQ or OP. When the price (average revenue) is above average cost, a firm will be making supernormal profit. From the figure it can be seen that AR is above AC in the equilibrium point. As AR is above AC, this firm is making abnormal profits in the short-run. The abnormal profit per unit is QR, i.e., the difference between AR and AC at equilibrium point and the total supernormal profit is OR x OM. This total abnormal profits is represented by the rectangle PQRS. The firm may make supernormal profits in the short-run if it satisfies the following two conditions.



a)  $MR = MC$

b)  $AR > AC$

#### b) **Long-run**

## **BEFA UNIT III**

More and more firms will be entering the market having been attracted by supernormal profits enjoyed by the existing firms in the industry. As a result, competition becomes intensive on one hand, firms will compete with one another for acquiring scarce inputs pushing up the prices of factor inputs. On the other hand, on the entry of several firms, the supply in the market will increase, pulling down the selling price of the products. In order to cope with the competition, the firms will have to increase the budget on advertising. The entry of new firms continues till the supernormal profits of the firms completely erode and ultimately firms in the industry will earn only normal profits. Those firms which are not able to earn at least normal profits will get closed. Thus in the long-run, every firm in the monopolistic competitive industry will earn only normal profits, which are just sufficient to stay in the business. It is noted that normal profits are part of average costs.

In the long-run, in order to achieve equilibrium position, the firm has to fulfill the following conditions:

- $MR = MC$
- $AR = AC$  at the level of equilibrium level of output.

## **OLIGOPOLY**

The term oligopoly is derived from two Greek words, oligos meaning a few, and pollēn meaning to sell. Oligopoly is the form of imperfect competition where there are a **few sellers** in the market, producing either a homogeneous product or producing products, which are close but not perfect substitute of each other.

### **Features**

#### **1. Monopoly Power:**

There is a element of monopoly power in oligopoly. Since there are only a few firms and each firm has a large share of the market. In its share of the market, it controls the price and output. Thus an oligopoly has some monopoly power.

#### **2. Interdependence of Firms:**

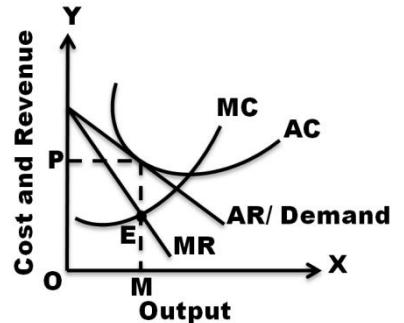
Under oligopoly, there are only a few firms, each producing a homogeneous or slightly differentiated product. Since the number of firms is small, each firm enjoys a large share of the market and has a significant influence on the price and output decisions. Thus, there is interdependence of firms. No firm can ignore the actions and reactions of rival firms under oligopoly.

#### **3. Conflicting Attitude of Firms:**

Under oligopoly, two types of conflicting attitudes are found in the firms. On the one hand, firms realize the disadvantages of mutual competition and desire to combine to maximize their joint profits. This tendency leads to the formation of collusion. On the other hand, the desire to maximize one's individual profit may lead to conflict and antagonism; the firms come into clash with one another on the question of distribution of profits and allocation of markets. Thus, there is an existence of two opposing attitudes among the firms.

#### **4. Few firms. In this market, only few sellers are found:**

For example, the market for automobiles in India exhibits oligopolistic structure as there are only few producers of automobiles. If there are only two firms, it is called 'duopoly'.



## **BEFA UNIT III**

### **5. Nature of product:**

If the firms product homogeneous product, it becomes pure oligopoly. The firms with product differentiation constitute impure oligopoly.

### **6. Interdependence among firms:**

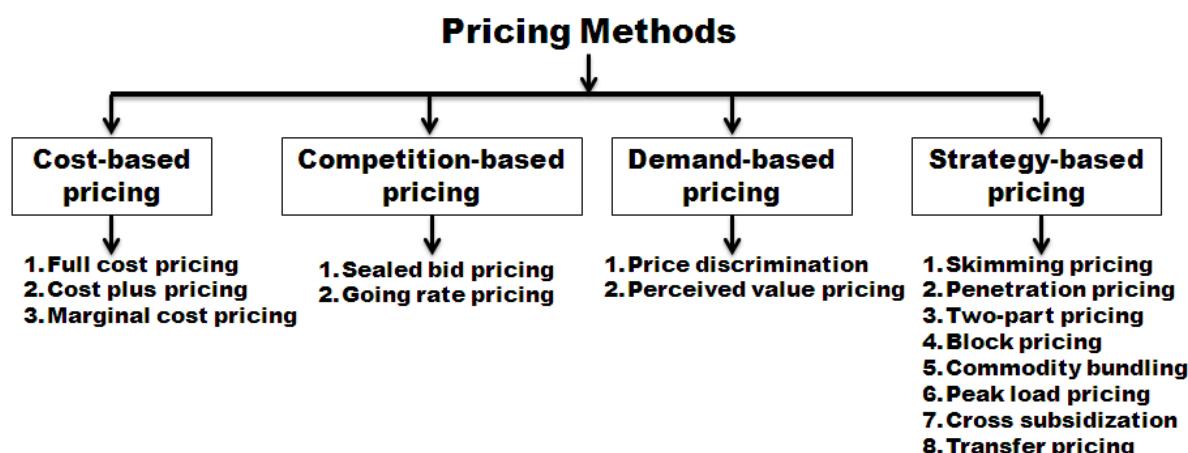
In oligopoly market, each firm treats the other as its rival firm. It is for this reason that each firm while determining price of its product, takes into account the reaction of the other firms to its own action.

### **7. Large number of consumers:**

In this market, there are large numbers of consumers to demand the product.

## **TYPES OF PRICING**

Firms set prices for their products through several alternative means. The important pricing methods followed in practice are shown in the chart.



#### **A. Cost Based Pricing**

1. **Full cost pricing**:-Under this method, price is just equal to the average cost.
2. **Cost plus pricing**:- Here, the average cost is ascertained and then a conventional margin added to the cost to arrive at the price. In other words, find out the product unit's total cost and add a percentage of profit to arrive at the selling price. It is commonly followed in departmental stores and other retail shops. This method is simple to be administered. It may be very difficult to find the selling price in advance due to complexity of the nature of the project.
3. **Marginal cost pricing(Break even pricing or Target profit pricing)**:- In this method, selling price is fixed in such a way that it covers full variable or marginal cost and contributes towards recovery of fixed costs. in the stiff competition, marginal cost offers a guidelines as to how far the selling price can be lowered.

#### **B. Competition based pricing**

Here the price of product is set based on what the competitor charges for a similar product. In other words, a reduction in the price of products by the competitor will force us to follow suit. In such a case, how far we can go on reducing the price?. Here the marginal cost concept comes handy. As long as the price covers the marginal cost, continue to sell. If not, better stop selling. It is because, every unit sold at less than marginal cost results in loss.

## **BEFA UNIT III**

1. **Sealed bid pricing**:- This method is more popular in tenders and contracts. Each contracting firm quotes its price in a sealed cover called “tender”. All the tenders are opened on a scheduled date and the person who quotes the lowest price is awarded the contract.
2. **Going rate pricing**:- Here the prevailing market price is charged. Suppose, when one wants to buy or sell gold, the prevailing market rate at a given point of time is taken as the basis to determine the price.

### **C. Demand Based Pricing**

1. **Perceived value pricing**:- This method considers the buyer's perception of the value of the product as the basis of pricing. Here the pricing rule is that the firm must develop procedures for measuring the relative value of the product as perceived by consumers.
2. **Price discrimination(Differential pricing)**:- Price discrimination refers to the practice of charging different prices to customers for the same good. It involves selling a product or service for different prices in different market segments. Price differentiation depends on geographical location of the consumers, type of consumer, purchasing quantity, season, time of the service etc. E.g. Telephone charges, APSRTC charges.

### **D. Strategy based pricing**

1. **Skimming pricing**:- The company follows this method when the product is for the first time introduced in the market. Under this method, the company fixes a very high price for the product. this strategy is mostly found in case of technology products. When Samsung introduces a new cell phone model, it fixes a high price because of the uniqueness of the product.
2. **Penetration pricing**:- This is exactly opposite to the market skimming method. Here, a low price is fixed for the product in order to catch the attention of consumers, once the product image and credibility is established, the seller slowly starts jacking up the price to reap good profits in future. The Rin washing soap perhaps falls into this category. This soap was sold at a rather low price in the beginning and the firm even distributed free samples. Today, it is quite an expensive brand and yet it is selling very well.
3. **Two-part pricing**:- Under this strategy, a firm charges a fixed fee for the right to purchase its goods, plus a per unit charge for each unit purchased. Entertainment houses such as country clubs, athletic clubs, etc, usually adopt this strategy. They charge a fixed initiation fee or membership fee plus a charge, per month or per visit, to use the facilities.
4. **Block pricing**:- We see block pricing in our day-to-day life very frequently. Four Santhoor soaps in a single pack with nice looking soap box or five Maggi packets in a single pack with an attractive bowl indicate this pricing method. The total value of the goods includes consumer's surplus as the consumer is given soap box and bowl along with the products freely. By selling certain number of units of a product as one package, the firm earns more than by selling unit wise.
5. **Commodity bundling**:- Commodity bundling means the practice of bundling two or more different products together and selling them at single ‘bundle price’. For example tourist companies offer the package that includes the travelling charges, hotel, meals and sight-seeing etc, at a bundle price instead of pricing each of these services separately.

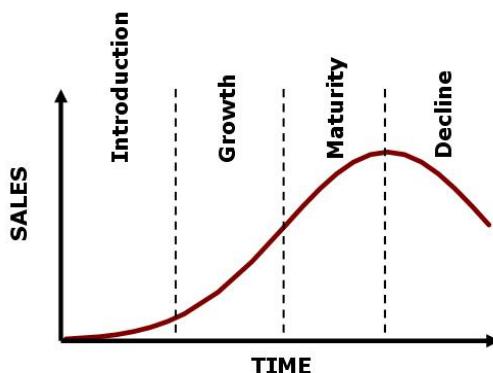
## **BEFA UNIT III**

6. **Peak load pricing:-** Under this method, high price is charged during the peak times than off-peak times. RTC increases charges during festivals, Railways charge more fares during tatkal time. During seasonal period when demand is likely to be higher, a firm may increase profits by peak load pricing.
7. **Cross subsidization:-** The process of charging high price for one group of customers in order to subsidize another group.
8. **Transfer pricing:-** Transfer pricing means a price at which one process forwards their output(work-in-progress) to the next process for further processing. It is an internal pricing technique.

### **PRODUCT LIFE CYCLE BASED PRICING**

Companies must adapt to the stages of the product life cycle to effectively sell and promote their products. Depending on the product life cycle stage, a company will develop branding techniques and an appropriate pricing model. Understanding each stage helps businesses increase profits.

The stages of a product life cycle govern how a product is priced, distributed, and promoted. A new product goes through multiple stages during the course of its life cycle, including an introduction stage, growth stage, maturity stage and a decline stage. As a product ages, companies look for new ways to brand it, and also explore pricing changes. Market and competitor research help businesses assess the proper course of action to maintain product profitability.



#### **Introduction Stage**

A new product may simply be either another brand name added to the existing ones or an altogether new product. Pricing a new brand for which there are many substitutes available in market is not a big problem as pricing a new product for which close substitutes are not available.

There are two type of pricing strategies for new product.

1. **Skimming price policy:-** Selling a product at a high price, sacrificing high sales to gain a high profit, therefore ‘skimming’ the market. Usually employed to reimburse the cost of investment of the original research into the product - commonly used in electronic markets when a new range, such as DVD players, are firstly dispatched into the market at a high price.
2. **Penetration price policy:-** This pricing policy is adopted generally in the case of new product for which substitutes are available. This policy requires fixing a lower initial price designed to penetrate the market as quickly as possible.

#### **Growth Stage**

## **BEFA UNIT III**

During the growth stage, a company aims to develop brand recognition and increase their customer base. The quality of their product is often improved based on early reviews, and technical support is usually enhanced. Pricing remains generally stable as demand continues with minimal competition. A larger distribution network is formed to keep up with the pace of demand.

### **Maturity Stage**

In the maturity stage, the steady sales start to decline and companies face greater challenges in the marketplace. Competitors will often introduce rival products with the intent of grabbing some of the market share. This is the product life cycle stage in which the customer base is heavily fought over and price decreases most often occur. Additional features are added to distinguish a product from its competitors. Companies run promotions during this stage that highlight the primary differences between their product and their competitor's products.

### **Decline Stage**

In the decline stage, a company will make important decisions regarding the future of their product. They can choose to create new iterations of the product with new features, or they can reduce the price and offer it at a discount. A company may choose to discontinue the product altogether, either disposing of their inventory or selling it to another company who is willing to manufacture and market it. Promotion at this stage will depend on whether a company chooses to continue its product, and how they plan to re-market it.

## **BREAK EVEN ANALYSIS**

BEP analysis is also called as CVP analysis. The BEP can be defined as that level of sales at which total revenues equals total costs and the net income is equal to zero. This is also known as no-profit no-loss point.

Break-even analysis refers to analysis of costs and their possible impact on revenues and volume of the firm. Hence, it is also called the cost-volume-profit (CVP) analysis. A firm is said to attain the BEP when its total revenue is equal to total cost( $TR=TC$ ).

The main objective of the Break Even Analysis is not only to spot the BEP but also to develop an understanding of the relationships of cost, volume and price within a company's practical range of operations.

### **Assumptions of Break-Even Analysis**

1. All cost are divided into fixed and variable
2. Fixed costs remain constant whereas variable costs vary
3. Selling price remains constant
4. There will be no change in the operating efficiency

### **Key terms used in Break-even Analysis**

**1. Fixed cost(FC):-** Fixed cost remains fixed in the short-run. These costs must be borne by the firm even there is no production. Example: Rent, Insurance, Depreciation, permanent employees' salaries. Etc. Fixed cost per units varies.

## **BEFA UNIT III**

**2. Variable costs(VC):-** The costs which vary in direct proportion to the production/sales volume are called as variable costs. variable cost per unit is fixed. Examples for variable costs: cost of direct material, cost direct labor, direct expenses, operating supplies such as oil, grease etc.

**3. Total cost(TC):-** The total of fixed cost and variable costs.  $TC=FC+VC$

**4. Total revenue:-** The sales amount of goods sold in the market.(Selling Price per unit x No of units sold).

**5. Contribution:-** The excess of sales revenue over variable cost( $C=S-V$ ).

**6. P/V Ratio(Profit/Volume Ratio):-** The ratio between the contribution and sales:

$$P/VRatio = \frac{C}{S} = \frac{S-V}{S} = \frac{F+P}{S} = 1 - \frac{V}{S} = \frac{P}{M/S Sales} = \frac{F}{BEP Sales} = \frac{\text{Difference in profit/contribution}}{\text{Difference in sales}}$$

**7. Margin of Safety sales(M/S sales):-** The excess of actual total sales over break even sales.

$$M/S \text{ sales} = \text{Total sales} - \text{Break even sales} = \frac{P}{P/V \text{ Ratio}}$$

**8. Break-even point(BEP):-** The point where total revenue is just equal to the total cost is called Break-even point. At break-even point, there is no profit or no loss to the business. Break-even point can be calculated in units as well as in sales.

$$BEP(\text{in units}) = \frac{F}{C \text{ per unit}}$$

$$BEP(\text{in sales}) = \frac{F}{P/VRatio}$$

$$\text{Units for a desired profit} = \frac{F+DP}{C \text{ per unit}}$$

$$\text{Sales for a desired profit} = \frac{F + DP}{P/VRatio} = \text{Units for desired profit} \times SP \text{ per unit}$$

**S-V=F±P**  
**S=F+V±P**  
**P=S-(F+V)**

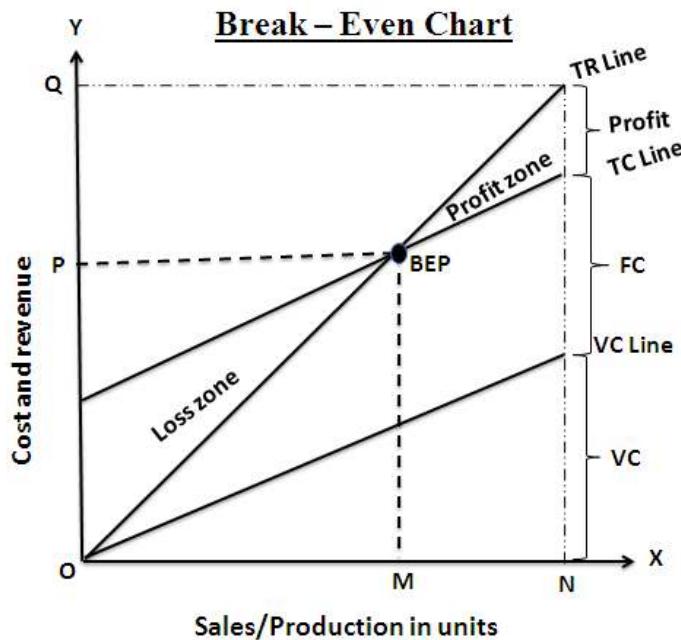
**C=Contribution**  
**S=Sales**  
**V=Variable cost**  
**F=Fixed cost**  
**P=Profit**  
**BEP=Break Even Point**  
**DP=Desired Profit**  
**+P=Profit**  
**-P=Loss**

### **Important notes:**

- At BEP sales, Total sales=Total cost(F+V). At this stage, total contribution(S-V) is equal to fixed cost. So, there is no profit or no loss. Hence, C=F.
- Below the BEP sales, total contribution is not equal to total fixed cost. Hence, C<F.
- Beyond BEP sales(M/S sales), since fixed cost is recovered at BEP sales, C=P.
- In total sales, C=F+P

## BEFA UNIT III

- In BEP sales,  $C=F$
- Below the BEP sales,  $C=F-P$ ;  $C < F$
- In M/S sales,  $C=P$
- M/S sales = Total sales - BEP sales
- BEP sales = Total sales - M/S sales
- Total sales = BEP sales + M/S sales



We understood from the above BEP graph that:

- In the above figure, units of products/sales are shown on the horizontal axis OX and costs and revenues are shown on vertical axis OY.
- The variable cost line is drawn first. It increases along with volume of production and sales.
- The total cost line is parallel to variable cost line. It is derived by adding total fixed costs line to the total variable cost line.
- The total revenue line (TR) starts from point (0) and increases along with volume of production or sales intersecting total cost line at point BEP.
- To the right of the BEP is profit zone and to the left of the BEP is the loss zone.
- A perpendicular from the BEP to the horizontal axis at point 'M' shows 'OM' is the quantity produced at 'OP' the cost at BEP.
- The angle formed by the point of intersection of total revenue and total cost line at BEP is called angle of incidence. The greater the angle of incidence, the higher is the magnitude of profit once the fixed costs are observed.
- Margin of safety refers to the excess of production or sales over and above the BEP. The margin of safety 'MN' is the difference between ON and OM ( $ON-OM=MN$ ). The sales value at ON is OQ.

### SIGNIFICANCE OF BREAK-EVEN ANALYSIS

- 1) To ascertain the profit on a particular level of sales volume or a given capacity of production.
- 2) To calculate sales required to earn a particular desired level of profit.
- 3) To compare the product lines, sales area, method of sale for individual company.
- 4) To compare the efficiency of the different firms.
- 5) To decide whether to add a particular product to the existing product line or drop one from it.
- 6) To decide to 'make or buy' a given component or spare part.
- 7) To decide what promotion mix will yield optimum sales.

## **BEFA UNIT III**

- 8) To assess the impact of changes in fixed cost, variable cost or selling price on BEP and profits during a given period.

### **LIMITATIONS OF BREAK-EVEN ANALYSIS**

- 1) Break-even point is based on fixed cost, variable cost and total revenue. A change in one variable is going to affect the BEP.
- 2) All costs cannot be classified into fixed and variable costs. we have semi-variable costs also.
- 3) In case of multi-product firm, a single chart cannot be of any use. Series of charts have to be made use of .
- 4) It is based on fixed cost concept and hence-holds good only in the short-run.
- 5) Total cost and total revenue lines are not always straight as shown in the figure. The quantity and price discounts are the usual phenomena affecting the total revenue line.
- 6) Where the business conditions are volatile, BEP cannot give stable results.

### **PROBLEMS AND SOLUTIONS:**

1. 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 break-even point in terms of volume and also sales value.
  - b. Calculate the margin of safety considering that the actual production is 8000 units.

**Solution:**

$$a. BEP \text{ (in units)} = \frac{F}{C \text{ per unit}}$$

Note: BEP in units can be calculated only when unit sales price and unit variable cost are given.

$$\text{Contribution per unit} = \text{Selling price per unit} - \text{Variable cost per unit} = S - V = 5 - 3 = 2$$

$$BEP \text{ (in units)} = \frac{F}{C \text{ per unit}} = \frac{10000}{2} = 5000 \text{ units}$$

$$BEP \text{ (in sales)} = \frac{F}{P/V \text{ ratio}}$$

$$P/V \text{ ratio} = \frac{C}{S} \times 100 = \frac{2}{5} \times 100 = 40\%$$

$$BEP \text{ (in sales)} = \frac{F}{P/V \text{ ratio}} = \frac{10000}{40\%} = Rs. 25000$$

(or)

$$BEP \text{ (in sales)} = BEP \text{ units} \times \text{Selling Price per unit} = 5000 \times 5 = 25000$$

### BEFA UNIT III

**b. Margin of safety sales** = 
$$\frac{P}{P/V \text{ ratio}}$$

Profit = Total Sales – (Total Variable cost + Fixed cost)

Profit = Contribution – Fixed cost

Contribution = Sales – Variable cost

Total Sales = Total Units sold x Selling price per unit = 8000 x 5 = Rs. 40000

Total variable cost x Variable cost per unit = 8000 x 3 = Rs. 24000

Profit = Total Sales – (Total Variable cost + Fixed cost) = 40000 – (24000+10000) = Rs. 6000

$$\text{Margin of safety sales} = \frac{P}{P/V \text{ ratio}} = \frac{6000}{40\%} = \text{Rs. } 15000$$

(or)

Margin of safety sales = Margin of safety units x Selling price per unit

Margin of safety unit = Total units – BEP units = 8000 – 5000 = 3000

Margin of safety sales = Margin of safety units x Selling price per unit = 3000 x 5 = Rs.15000

- 2.** A high-tech rail can carry a maximum of 36,000 passengers per annum at a fare of Rs. 400. The variable cost per passenger is Rs. 150 while the fixed costs are Rs.25,00,000 per year. Find the break-even point in terms of number of passengers and also in terms of fare collections.

**Solution:**

**a. BEP (in number of passengers)** = 
$$\frac{F}{C \text{ per unit}}$$

$$\begin{aligned} \text{Contribution per passenger} &= \text{Selling price per passenger} - \text{Variable cost per passenger} \\ &= S - V = 400 - 150 = 250 \end{aligned}$$

$$\text{BEP (in number of passengers)} = \frac{F}{C \text{ per unit}} = \frac{2500000}{250} = 10000 \text{ passengers}$$

**b. BEP (in Fare collection)** = 
$$\frac{F}{P/V \text{ ratio}}$$

$$P/V \text{ ratio} = \frac{C}{S} \times 100 = \frac{250}{400} \times 100 = 62.50\%$$

$$\text{BEP (in Fare collection)} = \frac{F}{P/V \text{ ratio}} = \frac{2500000}{62.50\%} = \text{Rs. } 4000000$$

- 3.** Srikanth Enterprises deals in the supply of hardware parts of computer. The following cost data is available for two successive periods.

	<b>Year I (Rs)</b>	<b>Year II (Rs)</b>
Sales	50,000	1,20,000
Fixed costs	10,000	20,000
Variable cost	30,000	60,000

Determine 1. Break-even point, 2. Margin of safety

**Solution:**

### BEFA UNIT III

$$1. BEP \text{ (in sales)} = \frac{F}{P/V \text{ ratio}}$$

$$P/V \text{ ratio} = \frac{C}{S} X 100 = \frac{S - V}{S} X 100$$

$$\text{Year I. } P/V \text{ ratio} = \frac{C}{S} X 100 = \frac{S - V}{S} X 100 = \frac{50000 - 30000}{50000} X 100 = 40\%$$

$$\text{Year II. } P/V \text{ ratio} = \frac{C}{S} X 100 = \frac{S - V}{S} X 100 = \frac{120000 - 60000}{120000} X 100 = 50\%$$

$$\text{Year I. } BEP \text{ (in sales)} = \frac{F}{P/V \text{ ratio}} = \frac{10000}{40\%} = \text{Rs. 25000}$$

$$\text{Year II. } BEP \text{ (in sales)} = \frac{F}{P/V \text{ ratio}} = \frac{20000}{50\%} = \text{Rs. 40000}$$

$$2. Margin of safety sales = \frac{P}{P/V \text{ ratio}}$$

$$\text{Profit} = \text{Total Sales} - (\text{Total Variable cost} + \text{Fixed cost}) = S - (V + F)$$

$$\text{Year I. Profit} = S - (V + F) = 50000 - (30000 + 10000) = \text{Rs. 10000}$$

$$\text{Year II. Profit} = S - (V + F) = 120000 - (60000 + 20000) = \text{Rs. 40000}$$

$$\text{Year I. Margin of safety sales} = \frac{P}{P/V \text{ ratio}} = \frac{10000}{40\%} = \text{Rs. 25000}$$

$$\text{Year II. Margin of safety sales} = \frac{P}{P/V \text{ ratio}} = \frac{40000}{50\%} = \text{Rs. 80000}$$

4. From the following data, calculate,

- a. P/V Ratio,    b. Profit when sales are Rs. 20,000

Fixed expenses Rs. 4,000, Break-even point Rs. 10,000

**Solution:**

$$\begin{aligned} a. P/V \text{ ratio} &= \frac{C}{S} = \frac{S - V}{S} = \frac{F + P}{\text{Total Sales}} = \frac{F}{BEP \text{ sales}} = \frac{P}{M/S \text{ sales}} = 1 - \frac{V}{S} \\ &= \frac{\text{Difference in profits}}{\text{Difference in sales}} \end{aligned}$$

### BEFA UNIT III

$$P/V \text{ ratio} = \frac{F}{BEP \text{ sales}} = \frac{4000}{10000} \times 100 = 40\%$$

**b.** What is profit when total sales are Rs. 20000?.

Total sales = BEP sales + Margin of safety sales

**Note:-** Contribution of total sales includes profit and fixed cost. = C = (P+F)

Contribution of total sales = Total sales x P/V ratio

$$= 20000 \times 40\% = 8000$$

$$C = (P+F)$$

$$P = C - F = 8000 - 4000 = \text{Rs. } 4000$$

**5.** A company shows the trading results for two periods:

Period	Sales	Profit
Period I	Rs. 20,000	Rs. 1000
Period II	Rs. 10,000	Rs. 400

Calculate P/V Ratio.

**Solution:**

$$\begin{aligned} P/V \text{ ratio} &= \frac{C}{S} = \frac{S - V}{S} = \frac{F + P}{Total \text{ Sales}} = \frac{F}{BEP \text{ sales}} = \frac{P}{M/S \text{ sales}} = 1 - \frac{V}{S} \\ &= \frac{\text{Difference in profits}}{\text{Difference in sales}} \end{aligned}$$

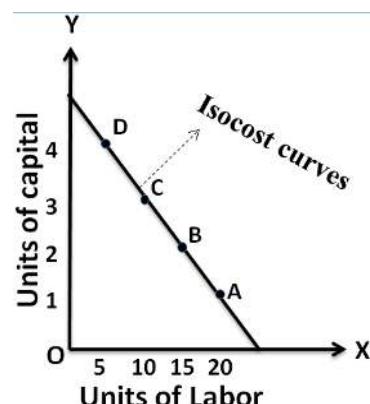
$$P/V \text{ ratio} = \frac{\text{Difference in profits}}{\text{Difference in sales}} = \frac{1000 - 400}{20000 - 10000} = \frac{600}{10000} \times 100 = 6\%$$

### ADDITIONAL INFORMATION

#### ISOCOST

Iso-cost means the line which will show the various combinations of two inputs which can be purchased with a given amount of total money. Suppose total amount is Rs 1000, labor cost is Rs 40 per unit, capital cost is Rs 200 per unit. Alternative combinations are as follows:

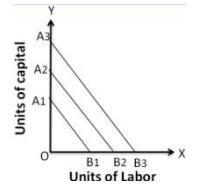
Combination	Capital(K)	Labor(L)	Cost
A	1	20	1000
B	2	15	1000
C	3	10	1000
D	4	5	1000



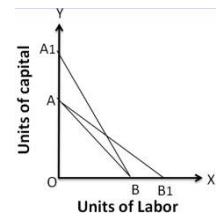
## BEFA UNIT III

Plotting these values on a graph, joining the points A, B, C, D, then, we will have an isocost line. If the level of production changes, the total cost changes and thus the isocost curve moves upwards, and vice versa.

When outlay is increased, price of factors unchanged, factor combination will change. For each increase in outlay, the isocost lines will be different and shifted to upward and they are parallel till prices of factors are unchanged.



The slope of isocost line vary when factor prices vary. AB is the original isocost line. Total outlay remaining the same, when capital price is lowered, labor price remaining unchanged, the new isocost line A1B is drawn. Similarly, AB1 represents new isocost line when labor price is reduced, capital price being unchanged. AB, A1B and AB1 alternative cost lines corresponding to varying factor prices.



### MARGINAL RATE OF TECHNICAL SUBSTITUTION (MRTS)

The marginal rate of technical substitution (MRTS) refers to the rate at which one input factor can be substituted with the other to attain a given level of output. The slope of isoquant has a technical name called MRTS.

$$MRTS = \frac{\text{Change in one input}}{\text{Change in another input}} = \frac{\Delta K}{\Delta L}$$

Where  $\Delta K$  is change in capital and  $\Delta L$  is change in labor.

$$MRTS = \frac{2 - 1}{20 - 15} = 5:1$$

Combination	Capital(K)	Labor(L)	Production (units)	MRTS
A	1	20	20000	-
B	2	15	20000	5:1
C	3	11	20000	4:1
D	4	8	20000	3:1
E	5	6	20000	2:1
F	6	5	20000	1:1

### LEAST COST COMBINATION OF INPUTS

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

For example: Here are two input combinations for production of 100 pens. The price of capital and labor are Rs 7 and 10 respectively.

Combination	Capital(K)	Labor(L)
A	10	4
B	8	5
C	6	6
D	5	7
E	4	10

The following table clarifies the combination which has least cost. The combination no. 3 with a total cost of 102 represents the least cost.

Combination	Inputs (Units)		Cost (Rs)		Total cost (Rs)
	Capital(K)	Labor(L)	K	L	
A	10	4	70	40	110
B	8	5	56	50	106
C	6	6	42	60	102
D	5	7	35	70	105
E	4	10	28	100	128

## BEFA UNIT III

In our two input, one output production function, the cost equation for inputs can be written as  $C = LPL + KPK$  where,

$C$  = Total cost of inputs

$L$  = Quantity of labor

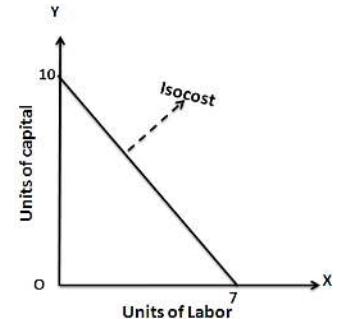
$PL$  = Price of labor

$K$  = Quantity of capital

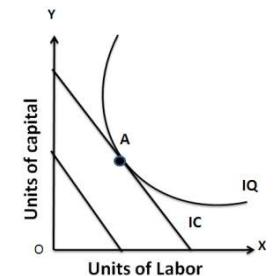
$PK$  = Price of capital

Thus a linear equation can be obtained for a given level of expenditure and prevailing prices of inputs. For labor costing Rs 10 per unit and capital costing Rs 7 per unit, the cost equation becomes  $C=10L+7K$ . If the company has budget of Rs 70,  $10L+7K=70$  i.e., it can buy 7 units of labor with no capital or 10 units of capital with no labor or some in between combination of labor and capital. By joining the two extreme points, we get an isocost.

Once the isocost has been developed for a particular budget, we can draw the isoquant for the required output level on the same graph.



When the isoquant curve is superimposed on the isocost line, the point of tangency between the isoquant and the isocost is the point of the least cost combination of inputs. At that point A, labor and capital are combined in a proportion that maximizes the output for a given budget



When a family of isoquants is superimposed on the various possible budget lines(isocost lines), all the isocosts will be tangential. We will thus have a number of least cost combinations one each for every output level. If all the points of tangency between the isocosts and isoquants, representing different output levels are joined, the resultant curve is known as an "Expansion Path". Thus, expansion path is the locus of all possible least cost combinations of inputs for a production function.

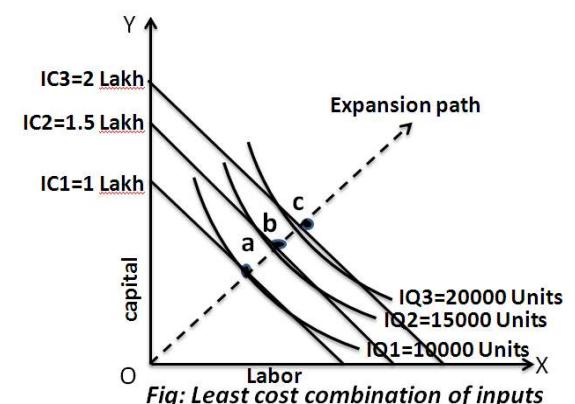


Fig: Least cost combination of inputs

The points of tangencies a,b,c, on the isoquant curves represent the least cost combination of inputs yielding maximum level of output.

## **BEFA UNIT III**

### **ECONOMIES OF SCALE**

Production may be carried on a small scale or on a large scale by a firm. When a firm expands its size of production by increasing all the factors, it secures certain advantages known as economies of production. Marshall has classified these economies of large-scale production into internal economies and external economies.

**Internal economies** result from an increase in the scale of output of a firm and cannot be achieved unless output increases. Hence internal economies depend solely upon the size of the firm and are different for different firms.

**External economies** are those benefits, which are shared in by a number of firms or industries when the scale of production in an industry or groups of industries increases. Hence external economies benefit all firms within the industry as the size of the industry expands.

#### **I. Internal Economies:**

##### **A). Technical Economies.**

Technical economies arise to a firm from the use of better machines and superior techniques of production. As a result, production increases and per unit cost of production falls. A large firm, which employs costly and superior plant and equipment, enjoys a technical superiority over a small firm. This increases the productive capacity of the firm and reduces the unit cost of production.

##### **B). Managerial Economies:**

These economies arise due to better and more elaborate management, which only the large size firms can afford. There may be a separate head for manufacturing, assembling, packing, marketing, general administration etc. Each department is under the charge of an expert. Hence the appointment of experts, division of administration into several departments, functional specialization and scientific co-ordination of various works make the management of the firm most efficient.

##### **C). Marketing Economies:**

The large firm reaps marketing or commercial economies in buying its requirements and in selling its final products. The large firm generally has a separate marketing department. It can buy and sell on behalf of the firm, when the market trends are more favorable. In the matter of buying, they could enjoy advantages like preferential treatment, transport concessions, cheap credit, prompt delivery and fine relation with dealers. Similarly it sells its products more effectively for a higher margin of profit.

##### **D). Financial Economies:**

The large firm is able to secure the necessary finances either for fixed capital purposes or for working capital needs more easily and cheaply. It can borrow from the public, banks and other financial institutions at relatively cheaper rates.

##### **E). Risk bearing Economies:**

## **BEFA UNIT III**

As there is growth in the size of the firm, there is increase in the risk also. The firm can insure its assets against the hazards of fire, theft and other risks. More often, they deal in more than one product to offset the losses by the profits from the sale of others.

### **F). Economies of Research:**

A large firm possesses larger resources and can establish its own research laboratory and employ trained research workers. The firm may even invent new production techniques for increasing its output and reducing cost.

### **G). Economies of welfare:**

A large firm can provide better working conditions in-and out-side the factory. Facilities like subsidized canteens, crèches for the infants, recreation room, cheap houses, educational and medical facilities tend to increase the productive efficiency of the workers, which helps in raising production and reducing costs.

## **II. External Economies.**

### **A). Economies of Concentration:**

When an industry is concentrated in a particular area, all the member firms reap some common economies like skilled labour, improved means of transport and communications, banking and financial services, supply of power and benefits from subsidiaries. All these facilities tend to lower the unit cost of production of all the firms in the industry.

### **B). Economies of Information**

The industry can set up an information centre which may publish a journal and pass on information regarding the availability of raw materials, modern machines, export potentialities and provide other information needed by the firms. It will benefit all firms and reduction in their costs.

### **C). Economies of Welfare:**

An industry is in a better position to provide welfare facilities to the workers. It may get land at concessional rates and procure special facilities from the local bodies for setting up housing colonies for the workers. It may also establish public health care units, educational institutions both general and technical so that a continuous supply of skilled labour is available to the industry. This will help the efficiency of the workers.

### **D). Economies of Disintegration:**

The firms in an industry may also reap the economies of specialization. When an industry expands, it becomes possible to split up some of the processes which are taken over by specialist firms. For example, in the cotton textile industry, some firms may specialize in manufacturing thread, others in printing, still others in dyeing, some in long cloth, some in dhotis, some in shirting etc. As a result, the efficiency of the firms specializing in different fields increases and the unit cost of production falls.

Thus internal economies depend upon the size of the firm and external economies depend upon the size of industry.

## **BEFA UNIT III**

### **DISECONOMIES OF SCALE**

Internal and external 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 result diseconomies instead of economies. When a firm expands beyond proper limits, it is beyond the capacity of the manager to manage it efficiently. This is an example of an internal diseconomy. In the same manner, the expansion of an industry may result in diseconomies, which may be called external diseconomies.

#### **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. Lack of finance retards the production plans thereby increasing costs of the firm.

#### **B). Managerial diseconomies:**

There are difficulties of large-scale management. Supervision becomes a difficult job. Workers do not work efficiently, wastages arise, decision-making becomes difficult, coordination between workers and management disappears and production costs increase.

#### **C). Marketing Diseconomies:**

As business is expanded, prices of the factors of production will rise. The cost will therefore rise. Raw materials may not be available in sufficient quantities due to their scarcities. Additional output may depress the price in the market. The demand for the products may fall as a result of changes in tastes and preferences of the people. Hence cost will exceed the revenue.

#### **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. As a result cost per unit increases. Internal diseconomies follow.

#### **E). Diseconomies of Risk-taking:**

As the scale of production of a firm expands, risks also increase with it. Wrong decision by the management may adversely affect production. If large firms are affected by any disaster, natural or human, the economy will be put to strains.

## **BEFA UNIT IV**

### **INTRODUCTION TO ACCOUNTING**

The purpose of any business is to make profits for that some business activities are to be conducted. You may involve in transactions daily. Any human activity directed at making profit is called business. Business is of different types. It may be trading activity or manufacturing activity. Business may require capital which may be owner's capital and borrowed capital. Transactions involve exchange of value like purchase of goods, sale of goods for cash or credit and payment of expenses in the course of production and distribution.

#### **History of Accounting:**

Accounting is as old as civilization itself. From the ancient relics of Babylon, it can be will proved that accounting did exist as long as 2600 B.C. However, in modern form accounting based on the principles of Double Entry System came into existence in 17<sup>th</sup> Century. Fra Luka Paciolo, a mathematician published a book *De computic et scripturis* in 1494 at Venice in Italy. This book was translated into English in 1543. In this book he covered a brief section on 'book-keeping'.

#### **Origin of Accounting in India:**

Accounting was practiced in India thousand years ago and there is a clear evidence for this. In his famous book *Arthashastra* Kautilya dealt with not only politics and economics but also the art of proper keeping of accounts. However, the accounting on modern lines was introduced in India after 1850 with the formation joint stock companies in India.

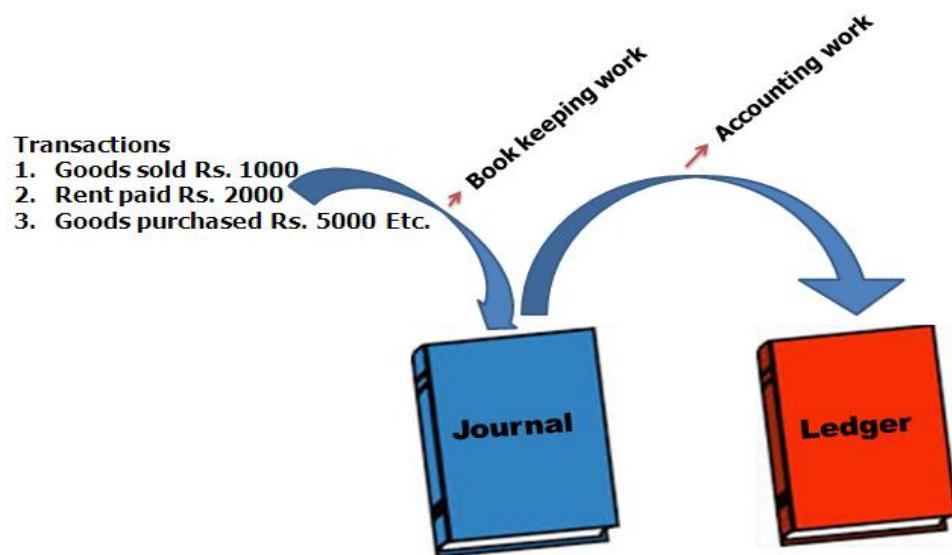
Accounting in India is now a fast developing discipline. The two premier Accounting Institutes in India viz., chartered Accountants of India and the Institute of Cost and Works Accountants of India are making continuous and substantial contributions. The international Accounts Standards Committee (IASC) was established as on 29<sup>th</sup> June. In India the 'Accounting Standards Board (ASB) is formulating 'Accounting Standards' on the lines of standards framed by International Accounting Standards Committee.\

### **BOOK-KEEPING AND ACCOUNTING**

**Book – Keeping:** Book – Keeping involves the chronological recording of financial transactions in a set of books in a systematic manner.

## **BEFA UNIT IV**

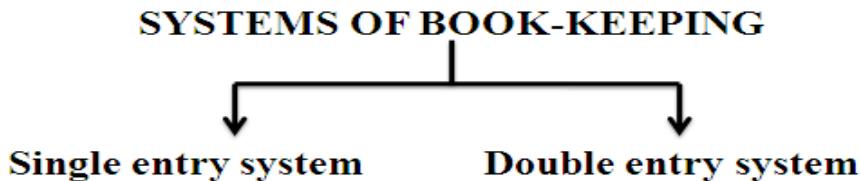
**Accounting:** Accounting is concerned with the maintenance of accounts giving stress to the design of the system of records, the preparation of reports based on the recorded date and the interpretation of the reports.



### **DIFFERENCE BETWEEN BOOK-KEEPING AND ACCOUNTING:**

<b>BOOK-KEEPING</b>		<b>ACCOUNTING</b>
Concerned with recording of transactions	1	Concerned with classifying, summarizing, analyzing and interpreting the data and communicating to the end users
Book-keeper maintains the accounts of particular section	2	Accountant maintains the accounts of whole organization
He works under an accountant	3	He directs and reviews the work of book-keeper
He has limited knowledge	4	He has higher level of knowledge, conceptual understanding, analytical skills
His work is clerical in nature	5	His work is executive in nature

## **BEFA UNIT IV** **SYSTEMS OF BOOK-KEEPING:**



### **1. Single entry system**

- It is incomplete system of double entry system.
- Only cash and personal accounts are maintained.

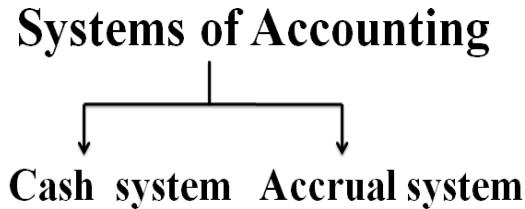
### **2. Double entry system**

- It is only the system that records two aspects of a transaction.
- In this system, the transactions are recorded with the help of “Debit-Credit rules”.

### **Definition of Accounting:**

**American Institute of Certified Public Accountants (AICPA):** “The art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events, which are in part at least, of a financial character and interpreting the results thereof.”

Thus, accounting is an art of identifying, recording, summarizing and interpreting business transactions of financial nature. Hence accounting is the **Language of Business**.



**1. Cash system:** Only cash related transactions are recorded. Usually, Government and some professionals use this type of accounting system. Receipts and payments account is prepared. It does not present true picture of the financial position of a company.

**2. Accrual system:** It is also known as mercantile system of accounting. It considers outstanding expenses and incomes. It provides clear picture of financial position of a firm. Company's Act recommended this system to all companies.

## **BEFA UNIT IV**

### **BRANCHES OF ACCOUNTING**

The important branches of accounting are:

1. **Financial Accounting:** The purpose of Accounting is to ascertain the financial results i.e. profit or loss in the operations during a specific period. It is also aimed at knowing the financial position, i.e. assets, liabilities and equity position at the end of the period. It also provides other relevant information to the management as a basic for decision-making for planning and controlling the operations of the business.
2. **Cost Accounting:** The purpose of this branch of accounting is to ascertain the cost of a product / operation / project and the costs incurred for carrying out various activities. It also assist the management in controlling the costs. The necessary data and information are gathered from financial and other sources.
3. **Management Accounting :** Its aim to assist the management in taking correct policy decision and to evaluate the impact of its decisions and actions. The data required for this purpose are drawn accounting and cost-accounting.

### **FUNCTIONS OF AN ACCOUNTANT**

The job of an accountant involves the following types of accounting works :

1. **Designing Work :** It includes the designing of the accounting system, basis for identification and classification of financial transactions and events, forms, methods, procedures, etc.
2. **Recording Work :** The financial transactions are identified, classified and recorded in appropriate books of accounts according to principles. This is “Book Keeping”. The recording of transactions tends to be mechanical and repetitive.
3. **Summarizing Work :** The recorded transactions are summarized into significant form according to generally accepted accounting principles. The work includes the preparation of profit and loss account, balance sheet. This phase is called ‘preparation of final accounts’
4. **Analysis and Interpretation Work:** The financial statements are analysed by using ratio analysis, break-even analysis, funds flow and cash flow analysis.
5. **Reporting Work:** The summarized statements along with analysis and interpretation are communicated to the interested parties or whoever has the right to receive them. For Ex. Share holders.

## **BEFA UNIT IV**

In addition, the accounting departments has to prepare and send regular reports so as to assist the management in decision making. This is ‘Reporting’.

- 6. Preparation of Budget :** The management must be able to reasonably estimate the future requirements and opportunities. As an aid to this process, the accountant has to prepare budgets, like cash budget, capital budget, purchase budget, sales budget etc. this is ‘Budgeting’.
- 7. Taxation Work :** The accountant has to prepare various statements and returns pertaining to income-tax, sales-tax, excise or customs duties etc., and file the returns with the authorities concerned.
- 8. Auditing :** It involves a critical review and verification of the books of accounts statements and reports with a view to verifying their accuracy. This is ‘Auditing’.

### **USERS OF ACCOUNTING INFORMATION**

- 1. Managers :** These are the persons who manage the business, i.e. management at the top, middle and lower levels. Their requirements of information are different because they make different types of decisions.

Accounting information also helps the managers in appraising the performance of subordinates. As such Accounting is termed as “ the eyes and ears of management.”

- 2. Investors :** Those who are interested in buying the shares of company are naturally interested in the financial statements to know how safe the investment already made is and how safe the proposed investments will be.

- 3. Creditors :** Lenders are interested to know whether their load, principal and interest, will be paid when due. Suppliers and other creditors are also interested to know the ability of the firm to pay their dues in time.

- 4. Workers :** In our country, workers are entitled to payment of bonus which depends on the size of profit earned. Hence, they would like to be satisfied that the bonus being paid to them is correct. This knowledge also helps them in conducting negotiations for wages.

- 5. Customers :** They are also concerned with the stability and profitability of the enterprise. They may be interested in knowing the financial strength of the company to rent it for further decisions relating to purchase of goods.

## **BEFA UNIT IV**

- 6. Government:** Governments all over the world are using financial statements for compiling statistics concerning business which, in turn, helps in compiling national accounts. The financial statements are useful for tax authorities for calculating taxes.
- 7. Public :** The public at large interested in the functioning of the enterprises because it may make a substantial contribution to the local economy in many ways including the number of people employed and their patronage to local suppliers.
- 8. Researchers:** The financial statements, being a mirror of business conditions, is of great interest to scholars undertaking research in accounting theory as well as business affairs and practices.

### **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 accountant 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 and the financial position of the business at the end of the accounting period.
- 3. Provides control over assets:** Book-keeping provides information regarding cash in hand, cash at bank, stock of goods, accounts receivables 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 the present performance of the organization with that of its past. This enables the managers to draw useful conclusion 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.

## **BEFA UNIT IV**

- 8. Ascertaining Value of Business:** The accounting records will help in ascertaining the correct value of the business. This helps in the event of sale or purchase of a business.
- 9. Documentary evidence:** Accounting records can also be used as an evidence in the court to substantiate the claim of the business. These records are based on documentary proof. Every entry is supported by authentic vouchers. As such, Courts accept these records as evidence.
- 10. Helpful to management:** Accounting is useful to the management in various ways. It enables the management to assess the achievement of its performance. The weakness of the business can be identified and corrective measures can be applied to remove them with the help of accounting.

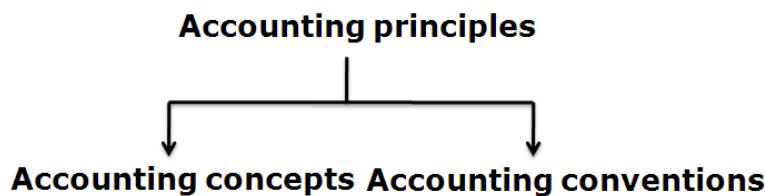
### **LIMITATIONS OF ACCOUNTING**

- 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, location advantage, 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 value of stock at cost price or market price, whichever is less. In case of, building, machinery etc., we adopt historical cost as the basis. In fact, the current values of buildings, plant and machinery may be much more than what is recorded in the balance sheet.
- 3. Estimates based on Personal Judgment:** The estimate used for determining the values of various items may not be correct. For example, debtor are estimated in terms of collectability, 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 the overall profitability of the business. No information is given about the cost and profitability of different activities of products or divisions.

### **ACCOUNTING PRINCIPLES**

Accounting principles are the rules and regulations which are followed by the accountants at the time of recording the accounting transactions. They help in measuring, recording and summarizing the transactions. These principles are termed as “Generally Accepted Accounting Principles (GAAP) “ which are basic assumptions.

## **BEFA UNIT IV**



### **Accounting Concepts:**

1. **Business Entity Concept:** In this concept “Business is treated as separate from the proprietor”. All the Transactions recorded in the book of Business and not in the books of proprietor. The proprietor is also treated as a creditor for the Business.
2. **Going Concern Concept:** This concept relates with the long life of Business. The assumption is that business will continue to exist for unlimited period unless it is dissolved due to some reasons or the other.
3. **Money Measurement Concept:** In this concept “Only those transactions are recorded in accounting which can be expressed in terms of money, those transactions which cannot be expressed in terms of money are not recorded in the books of accounting”.
4. **Cost Concept:** According to this concept, can asset is recorded at its cost in the books of account. i.e., the price, which is paid at the time of acquiring it. In balance sheet, these assets appear not at cost price every year, but depreciation is deducted and they appear at the amount, which is cost, less classification.
5. **Accounting Period Concept:** every Businessman wants to know the result of his investment and efforts after a certain period. Usually one-year period is regarded as an ideal for this purpose. This period is called Accounting Period. It depends on the nature of the business and object of the proprietor of business.
6. **Dual Aspect Concept:** According to this concept “Every business transactions has two aspects”, one is the receiving benefit aspect another one is giving benefit aspect. The receiving benefit aspect is termed as “DEBIT”, where as the giving benefit aspect is termed as “CREDIT”. Therefore, for every debit, there will be corresponding credit.
7. **Matching Cost Concept:** According to this concept “The expenses incurred during an accounting period, e.g., if revenue is recognized on all goods sold during a period, cost of those good sole should also be charged to that period.

## **BEFA UNIT IV**

8. **Realization\_Concept:** According to this concept revenue is recognized when a sale is made. Sale is considered to be made at the point when the property in goods passes to the buyer and he becomes legally liable to pay.

### **Accounting Conventions:**

1. **Full\_Disclosure:** According to this convention accounting reports should disclose fully and fairly the information. They purport to represent. They should be prepared honestly and sufficiently disclose information which is of material interest to proprietors, present and potential creditors and investors. The Companies ACT, 1956 makes it compulsory to provide all the information in the prescribed form.

2. **Materiality:** Under this convention the trader records important factor about the commercial activities. In the form of financial statements if any unimportant information is to be given for the sake of clarity it will be given as footnotes.

3. **Consistency:** It means that accounting method adopted should not be changed from year to year. It means that there should be consistency in the methods or principles followed. Or else the results of a year cannot be conveniently compared with that of another.

4. **Conservatism:** This convention warns the trader not to take unrealized income into account. That is why the practice of valuing stock at cost or market price, whichever is lower is in vogue. This is the policy of "playing safe"; it takes into consideration all prospective losses but leaves all prospective profits.

## **ELEMENTS OF FINANCIAL STATEMENTS**

**Entity:-** An entity is an economic unit which performs economic activities. Ex: Tata Steel, H.M.T. Ltd.

**Business transaction:-** A transaction is an exchange of goods or services for cash or credit. It involves transfer of money or money's worth that brings about change in the financial position of a business.

**Trade debtors:-** Trade debtors are the persons from whom the amounts are due for goods sold or services rendered on credit basis.

**Trade creditors:-** Trade creditors are those to whom the amounts are due for goods purchased or services rendered on credit basis.

**Goods:-** Goods are those with which the business firm trades. They are meant for resale.

**Assets:-** Assets are those which yield future economic benefits.

## **BEFA UNIT IV**

**Current Assets:-** current assets are those assets which are held in cash or which are likely to be converted into cash during the financial year.

**Fixed Assets:-** Fixed assets are those assets which are not held for resale in normal course of business.

**Tangible Fixed Assets:-** The assets that can be visible, seen and touched are called as “ Tangible Fixed Assets”.

**Intangible fixed assets:-** The assets that cannot be visible, seen and touched are called as “ Intangible Fixed Assets”.

**Liabilities:-** The financial obligations of the firm are called liabilities.

**Current Liabilities:-** The liabilities which fall due in a short period are known as “ Current Liabilities”.

**Long term liabilities:-** The liabilities which fall due for payment in a relatively short period are called as long term liabilities.

**Purchases:-** The total amount of goods obtained by an enterprise for resale either for cash or credit.

**Sales:-** The amount for which goods are sold or services are rendered either for cash or credit is called as sales.

**Expenditure:-** The amount incurred in the process of acquiring goods, assets or services.

**Revenue:-** The amount charged for the goods sold or services rendered by an enterprise.

**Capital:** Capital is the amount invested by the owner/proprietor in the firm. It is a liability to the firm.

**Drawings:** cash or goods withdrawn by the proprietor from the Business for his personal or Household is termed to as “drawing”.

**Reserve:** An amount set aside out of profits or other surplus and designed to meet contingencies.

**Account:** A summarized statements of transactions relating to a particular person, thing, Expense or income.

**Discount:** There are two types of discounts..

**cash discount:** An allowable made to encourage frame payment or before the expiration of the period allowed for credit.

## **BEFA UNIT IV**

Trade discount: A deduction from the gross or catalogue price allowed to traders who buys them for resale.

### **CLASSIFICATION OF ACCOUNTS**

All business transactions are classified into three categories:

- 1.Those relating to persons(Natural persons, artificial persons and representative persons)
- 2.Those relating to property(Assets)
- 3.Those relating to income & expenses

Thus, three classes 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” . In accounting, all natural persons and all the firms are considered as persons.

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, Obul Reddy & Sons A/C , HMT Ltd. A/C, Capital A/C, Drawings 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.: cash A/C, furniture A/C, building A/C, machinery A/C etc.

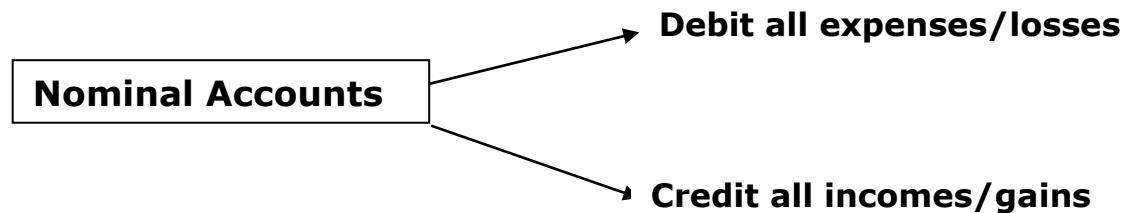
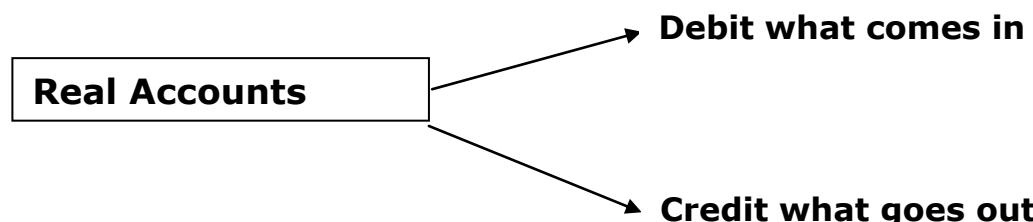
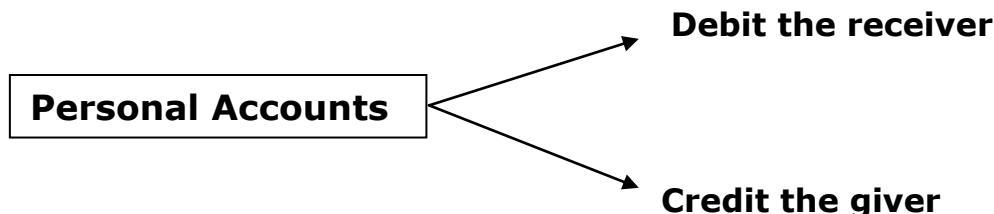
**3. Nominal Accounts:** Accounts relating to expenses, losses, incomes and gains are known as “Nominal Accounts”. A separate account is maintained for each item of expenses, losses, income or gain.

## **BEFA UNIT IV**

E.g.: Salaries A/C, stationery A/C, wages A/C, postage A/C, commission A/C, interest A/C, purchases A/C, rent A/C, discount A/C, commission received A/C, interest received A/C, rent received A/C, discount received A/C.

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....

### **DEBIT, CREDIT RULES**



## **BEFA UNIT IV**

### **Identification of the accounts involved in each transaction:**

1. Consider that the transaction is committed by the firm and it is being recorded in the books of the firm.
2. see whether it is cash transaction or credit transaction.
  - a. A transaction that refers to a person and doesn't refer to the term "cash" is called credit transaction
  - b. A transaction which is not credit transaction is called cash transaction
3. If the transaction is credit one, first find whether the ' personal A/C' is to be debited or credited and next find which account is to be credited or debited.
4. If it is a cash transaction, first find whether the ' cash A/C' is to be debited or credited and next find which account is to be credited or debited.
5. Debit means entering the amount on the left side of an account.
6. Credit means entering the amount on the right side of account.

### **ACCOUNTING EQUATION**

The basic accounting equation, also called the balance sheet equation, represents the relationship between the assets, liabilities, and owner's equity of a business. It is the foundation for the double-entry bookkeeping system. For each transaction, the total debits equal the total credits. It can be expressed as further more.

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

In a company, capital represents the shareholders' equity. Since every business transaction affects at least two of a company's accounts, the accounting equation will always be "in balance," meaning the left side should always equal the right side. Thus, the accounting formula essentially shows that what the firm owns (its assets) is purchased by either what it owes (its liabilities) or by what its owners invest (its shareholders equity or capital).

**For example:** A student buys a computer for Rs.1000. To pay for the computer, the student uses Rs.400 in cash and borrows Rs.600 for the remainder. Now his assets are worth Rs.1000, liabilities are Rs.600, and equity Rs.400.

## **BEFA UNIT IV**

The formula can be rewritten:

$$\text{Assets} - \text{Liabilities} = (\text{Shareholders' or Owners' Equity})$$

Sometimes we expand the Accounting Equation to show all the Equity components. This is called the

**Expanded Accounting Equation.**

$$\text{Assets} = \text{Liabilities} + \overbrace{\text{Owner, } \begin{matrix} \text{Capital} \\ - \end{matrix} \text{ Owner, } \begin{matrix} \text{Withdrawals} \\ + \end{matrix} \text{ Revenues} - \text{Expenses}}^{\text{Equity}}$$

Now it shows owners' interest is equal to property (assets) minus debts (liabilities). Since in a company, owners are shareholders, owner's interest is called shareholders' equity. Every accounting transaction affects at least one element of the equation, but always balances. Simplest transactions also include:

**Example 1: Prepare the Accounting Equation on the basis of following:**

1. Mr. Shiraz Khan started business and introduced capital Rs. 1,00,000 in cash.
2. Purchased goods in cash Rs. 50,000.
3. Purchased from Bismillah Furnitures Rs. 20,000.
4. Sold goods costing Rs. 25,000 for Rs. 35,000.
5. Paid Bismillah Furnitures in cash.

## BEFA UNIT IV

No.	Transaction		Asset Rs	=	Liabilities Rs	+	Capital Rs
1	Shiraz Khan started business with cash		100000	=	0	+	100000
2	Purchased goods in cash	Add	50000				
		Less	50000				
	<b>New Equation</b>		100000	=	0	+	100000
3	Purchased Goods from Bismillah Furnitures	Add	20000	=	20000	+	0
	<b>New Equation</b>		120000	=	20000	+	100000
4	Sold goods costing Rs 25000 for Rs 35000 (Note)	Less	-25000				
		Add	35000	=	0	+	10000
	<b>New Equation</b>		130000	=	20000	+	110000
5	Paid Bismillah Furnitures	Less	-20000	=	-20000	+	0
	<b>New Equation</b>		110000	=	0	+	110000

**Example 2: Prepare the Accounting Equation on the basis of following:**

1. Issuing shares for cash or other assets Rs.6000
2. Buying assets by borrowing money Rs.10000
3. Selling assets for cash Rs. 900
4. Buying assets by paying cash Rs.600 and by borrowing money 400.
5. Earning revenues Rs.700

## BEFA UNIT IV

Sl. No	Transaction		Assets = Liabilities + Capital			
1	Issuing shares for cash or other assets Rs.6000		+6,000	=	0	+6,000
2	Buying assets by borrowing money Rs.10000	<b>Add</b>	+10,000		+10,000	0
	<b>New Equation</b>		<b>16000</b>	=	<b>10000</b>	<b>+6000</b>
3	Selling assets for cash	<b>Add Less</b>	+900 -900		0	0
	<b>New Equation</b>		<b>16000</b>	=	<b>10000</b>	<b>+6000</b>
4	Buying assets by paying cash Rs.600 and by borrowing money 400.	<b>Add Less</b>	+1,000 -600		+400	0
	<b>New Equation</b>		<b>16400</b>	=	<b>10400</b>	<b>+6000</b>
5	Earning revenues Rs.700	<b>Add</b>	+700			+700
	<b>New Equation</b>		<b>17100</b>	=	<b>10400</b>	<b>+6700</b>

### JOURNAL

The first step in accounting therefore is the record of all the transactions in the books of original entry viz., Journal and then posting into ledges.

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.

Journal is treated as the book of original entry or first entry or prime entry. 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”.

## **BEFA UNIT IV**

The proforma of Journal is given below.

Date	Particulars	L.F	Debit Amount	Credit Amount

**Journalize the following examples:**

**Example 1. Journalize the following transactions in the books of Mr. Ram**

- 2015 Jan 1 Business started with Rs. 10,000  
 “ 2 Cash deposited in the bank Rs. 5,000  
 “ 5 Purchases Rs. 3,000  
 “ 8 Sales Rs. 4,000  
 “ 10 Cash drawn from the bank Rs. 1,000

**Solution:**

**Journal entries in the book of Mr.Ram**

Date	Particulars	LF	Dr Amount	Cr Amount
2015 Jan 1	Cash A/C Dr To Capital A/C (Being the business started)		10000	10000
	Bank A/C Dr To Cash A/C (Being Cash deposited in the bank)		5000	5000
	Purchases A/C Dr To Cash A/C (Being purchases made on the cash basis)		3000	3000

# **BEFA UNIT IV**

“ 8	<b>Cash A/C</b> <b>Dr</b> <b>To Sales A/C</b> <b>(Being sales made on the cash basis)</b>	<b>4000</b>	<b>4000</b>
“ 10	<b>Cash A/C</b> <b>Dr</b> <b>To Bank A/C</b> <b>(Being cash withdrawn from the bank)</b>	<b>1000</b>	<b>1000</b>

**Example 2.** Journalize the following transactions in the books of Sri Laxmi & Co.

2015	Jan 1	Business started with Rs. 10,000 Cash and Furniture Rs. 5,000
	“ 2	Goods purchased from Mr. Sathish Rs. 2,000
	“ 5	Rent paid Rs. 1,000
	“ 8	Goods sold to Mr. Ramya Rs. 4,000
	“ 10	Goods sold and cheque received Rs. 1,000

### Solution:

## **Journal entries**

Date	Particulars	L F	Dr Amount	Cr Amount
2015 Jan 1	Cash A/C	Dr	10000	
	Furniture A/C	Dr	5000	15000
	To Capital A/C			
	(Being the business started with cash and furniture)			
	Purchases A/C	Dr	2000	2000
" 2	To Sathish A/C			
	(Being goods sold on credit basis)			
" 5	Rent A/C	Dr	1000	1000
	To Cash A/C			
" 8	(Being rent paid)			
	Ramya A/C	Dr	4000	4000
" 10	To Sales A/C			
	(Being sales made on credit basis)			
" 10	Bank A/C	Dr	1000	1000
	To Sales A/C			
	(Being sales made for cheque)			

**Example 3.** Enter the following transactions in Journal

2015 Jan 1 Purchased office furniture Rs. 2000 and paid through cheque.  
“ 2 Cash sales Rs. 3000  
“ 5 Wages paid Rs. 1000  
“ 8 Telephone bill paid Rs. 500  
“ 10 Cash sales Rs. 2000 and credit sales Rs. 2000 to Sunil.

## BEFA UNIT IV

**Solution:**

**Journal entries**

Date	Particulars	L F	Dr Amount	Cr Amount
2015 Jan 1	Furniture A/C To Bank A/C (Being furniture purchased through cheque)	Dr	2000	2000
" 2	Cash A/C To Sales A/C (Being goods sold on credit basis)	Dr	3000	3000
" 5	Wages A/C To Cash A/C (Being wages paid)	Dr	1000	1000
" 8	Telephone bill A/C To Cash A/C (Being telephone bill paid)	Dr	500	500
" 10	Cash A/C Sunil A/C To Sales A/C (Being goods sold on cash and on credit)	Dr Dr	2000 2000	4000

**Example 4.** Journalize the following transactions.

- 2015 Jan 1 Salaries paid Rs. 2000
- “ 2 Paid for advertisement Rs. 3000
- “ 5 Purchased a car for office use Rs. 100000
- “ 8 Paid insurance premium Rs. 500
- “ 10 Returned goods to Suresh Rs. 100

## BEFA UNIT IV

**Solution:**

**Journal entries**

Date	Particulars	L F	Dr Amount	Cr Amount
2015 Jan 1	Salaries A/C To Cash A/C` (Being salaries paid through cash)	Dr	2000	2000
" 2	Advertisement A/C To Cash A/C (Being advertisement expenditure paid)	Dr	3000	3000
" 5	Car A/C To Cash A/C (Being car purchased )	Dr	100000	100000
" 8	Insurance premium A/C To Cash A/C (Being insurance premium paid)	Dr	500	500
" 10	Suresh A/C To Purchase returns A/C (Being goods returned to Suresh)	Dr	100	100

**Example 5.** Journalize the following transactions.

- 2015 Jan 1 Goods returned from Ram Rs. 200  
 " 2 Cash withdrawn for personal use Rs. 3000  
 " 5 Loan borrowed from SBH Rs. 100000  
 " 8 Interest received Rs. 500  
 " 10 Discount paid Rs. 100

**Solution:**

**Journal entries**

Date	Particulars	L F	Dr Amount	Cr Amount
2015 Jan 1	Sales returns A/C To Ram A/C` (Being goods returned from Ram)	Dr	200	200
" 2	Drawings A/C To Cash A/C (Being cash withdrawn for personal use)	Dr	3000	3000
" 5	Cash A/C To SBH loan A/C (Being loan borrowed)	Dr	100000	100000
" 8	Cash A/C To Interest A/C (Being interest received)	Dr	500	500
" 10	Discount A/C To Cash A/C (Being discount paid)	Dr	100	100

## BEFA UNIT IV

6. Journalize the following.

- a) Goods worth Rs. 30000 destroyed in fire. Insurance company admits half the claim.
- b) Delivery truck repaired at a cost of Rs. 40000.
- c) A cheque for Rs. 20000 sent to Robert in full settlement of account of Rs. 22000.
- d) A sum of Rs. 12000 received from Ahmed against a debt previously written off.
- e) Salaries yet to be paid is Rs. 80000.
- f) Swadeshi who owes Rs. 18000 becomes insolvent. Only 50% of dues received.

**Solution:**

**Journal entries**

Date	Particulars	L F	Dr Amount	Cr Amount
a)	Insurance Company A/C Goods Destroyed A/C To Trading A/C (Being goods destroyed and claimed )	Dr Dr	15000 15000	30000
b)	Repairs A/C To Cash A/C (Being van repairs incurred)	Dr	40000	40000
c)	Robert A/C To Bank A/C To Discount received A/C (Being cheque issued for full settlement)	Dr	22000	20000 2000
d)	Cash A/C To Bad debts received A/C (Being telephone bill paid)	Dr	12000	12000
e)	Salaries A/C To Outstanding salaries A/C (Being goods sold on cash and on credit)	Dr	80000	80000
f)	Cash A/C Bad debts A/C To Swadeshi A/C (Being goods sold on cash and on credit)	Dr Dr	9000 9000	18000

### SUBDIVISION OF JOURNAL

Small businesses record all transactions in a single journal but large companies record their transactions in different journals according to their nature. The journal is sub-divided into eight parts. They are;

1. **Purchase book** (where all credit purchases are recorded)
2. **Sales book** (where all credit sales are recorded)
3. **Purchase returns book** (where the particulars of goods returned to suppliers are recorded)
4. **Sales returns book** (where the particulars of goods returned from customers are recorded)
5. **Bills receivable book** (where the details of bills received are recorded)
6. **Bills payable book** (where the details of bills payable are recorded)
7. **Cash book** (where all the cash transaction are recorded)

## **BEFA UNIT IV**

8. Proper journal (where the transactions which are not recorded in the above books are recorded)

**Record the following transactions in the three columnar (cash, Bank, Discount columns) cash book.**

**Example 1. Prepare a three columnar cash book.**

2015 Jan 1 Manmohan started a business with cash balance of Rs. 10,000 and paid into bank Rs. 8,000.

3 Bought office furniture by cheque Rs. 3000

5 Sold goods for cash Rs. 1000

8 Anand paid Rs. 600 and was allowed a discount of Rs.60

12 A cheque received from Mani for Rs. 690 and allowed him a discount of Rs. 10; the cheque was deposited into bank.

18 Cash withdrawn from bank for office use Rs. 1000

24 Received a cheque for sales Rs. 1200

20 Drew cash for personal use Rs. 100; Salaries paid Rs. 500.

**Solution:**

### **Three columnar cash book**

Date	Particulars	L F	Disco unt	Cash	Bank	Date	Particulars	L F	Disco unt	Cash	Bank
2015 Jan 1	To Cash A/C			10000	8000	2015 Jan 3	By Furniture A/C				3000
5	To Sales A/C			1000		18	By Cash A/C	c			1000
8	To <u>Anand</u> A/C		60	600		31	By Drawings A/C			100	
12	To Mani A/C		10		690	31	By Salaries A/C			500	
18	To Bank A/C	c		1000						12000	5890
24	To Sales A/C				1200	31	By Balance (c/d)				
				100	12600					200	12600
					9890						9890
Feb 1	By Balance (b/d)				12000						

## BEFA UNIT IV

### Example 2.

2015 Jan 1 ABC firms has cash in hand Rs. 4,000 and balance at bank Rs. 5,000.

2 Deposited cash Rs. 3,500 into bank.

8 Bought goods worth Rs. 8000 from Ram.

10 Sold goods worth Rs. 15000 for cash.

12 Sold goods to Suresh for Rs. 5000

15 Paid Rs. 2000 to Ram on account

18 Withdrew Rs. 1000 from bank for personal use

20 Settled Ram account; he allows a discount of Rs. 200

23 Suresh paid Rs. 4900 in full settlement of account

25 Withdrew Rs. 2000 from bank for office use

Prepare a three columnar cash book.

### Solution:

### Three columnar cash book

Date	Particulars	L F	Disco unt	Cash	Bank	Date	Particulars	L F	Disco unt	Cash	Bank
2015 Jan 1	To Opening balances			4000	5000	2015 Jan 2	By Bank A/C	c		3500	
2	To Cash A/C	c			3500	15	By Ram A/C			2000	
10	To Sales A/C			15000		18	By Drawings A/C				1000
23	To Suresh A/C		100	4900		20	By Ram A/C		200	5800	
25	To Bank A/C	c		2000		25	By Cash A/C	c			2000
						31	By Balance (c/d)			14600	5500
				100	25900				200	25900	8500
Feb 1	By Balance (b/d)				8500						
				14600	5500						

### 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

## **BEFA UNIT IV**

ledger is designed to accommodate the various accounts maintained by 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”.

Posting is the process of entering in the ledger the entries given in the journal. Posting into ledger is done periodically, may be weekly or fortnightly as per the convenience of the business. 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. Further, for each new item a new account is to be opened.
3. Depending upon the number of transactions space for each account is to be determined in the ledger.
4. For each account there must be a name. This should be written in the top of the table. At the end of the name, the word “Account” is to be added.
5. The debit side of the Journal entry is to be posted on the debit side of the account, by starting with “TO”.
6. The credit side of the Journal entry is to be posted on the debit side of the account, by starting with “BY”.

*Proforma for ledger: LEDGER BOOK----- Account*

Date	Particulars	JF	Amount	Date	Particulars	JF	amount
	To				By		

**Example:**

Enter the following transactions in journal and post them into ledger:

2017 Jan. 1 Mr. Rameh started business with cash Rs.100,000  
2 He purchased furniture for Rs.20,000

## BEFA UNIT IV

3 He purchased goods for Rs.60,000

5 He sold goods for cash Rs.80,000

6 He paid salaries Rs.10,000

**Solution:**

### Journal Entries

Date	Particular	L.F	Amount	Amount
2017				
Jan. 1	Cash A/C .....Dr. To Capital (Being capital brought in)		100,000	100,000
2	Furniture A/C.....Dr. To Cash A/C (Being furniture purchased for cash)		20,000	20,000
3	Purchases A/C.....Dr. To Cash A/C (Goods purchased for cash)		60,000	60,000
5	Cash A/C.....Dr. To Sales A/C (Sold goods for cash)		80,000	80,000
6	Salaries A/C.....Dr. To Cash A/C (Salaries paid)		10,000	10,000

### Ledger

#### Cash Account

Date	Particular	Amount	Date	Particulars	Amount
2017			2017		
Jan.1	To Capital A/C	100,000	Jan.2	By Furniture A/C	20,000
Jan.5	To Sales A/C	80,000	Jan.3	By Purchases A/C	60,000
			Jan.6	By Salaries A/C	10,000
				By Balance c/d	90,000
		<b>180,000</b>			<b>180,000</b>

#### Capital Account

Date	Particular	Amount	Date	Particulars	Amount
2017			2017		
Jan.6	To Balance c/d	100,000	Jan.1	By Cash A/C	100,000
		<b>100,000</b>			<b>100,000</b>

## **BEFA UNIT IV**

### Furniture Account

<b>Date</b>	<b>Particular</b>	<b>Amount</b>	<b>Date</b>	<b>Particulars</b>	<b>Amount</b>
2017 Jan.2	To Cash A/C	20,000 <b>20,000</b>	2017 Jan.6	By Balance c/d	20,000 <b>20,000</b>

### Purchases Account

<b>Date</b>	<b>Particular</b>	<b>Amount</b>	<b>Date</b>	<b>Particulars</b>	<b>Amount</b>
2017 Jan.3	To Cash A/C	60,000 <b>60,000</b>	2017 Jan.6	By Balance c/d	60,000 <b>60,000</b>

### Sales Account

<b>Date</b>	<b>Particular</b>	<b>Amount</b>	<b>Date</b>	<b>Particulars</b>	<b>Amount</b>
2017 Jan.6	To Balance c/d	80,000 <b>80,000</b>	2017 Jan.5	By Cash A/C	80,000 <b>80,000</b>

### Salaries Account

<b>Date</b>	<b>Particular</b>	<b>Amount</b>	<b>Date</b>	<b>Particulars</b>	<b>Amount</b>
2017 Jan.6	To Cash A/C	10,000 <b>10,000</b>	2017 Jan.6	By Balance c/d	10,000 <b>10,000</b>

### **TRIAL BALANCE**

According to double entry system every debit has corresponding credit. All the debit balances are equal to credit balances. If they don't agree, it is understood that some mistakes are committed somewhere. Trial Balance is a statement in which debit and credit balances of all ledger accounts are shown to list the arithmetical accuracy of the books of accounts.

#### **Features of trial balance**

## BEFA UNIT IV

- ✓ It is not account.
- ✓ It contains debit and credit balances of accounts.
- ✓ It helps in preparation of final accounts.
- ✓ Both debit and credit side of a trial balances are always equal.

Format of the trial balance

Particulars	Debit Amount	Particulars	Credit Amount
Balances of all assets, Expenses, Losses	xxxx	Balances of all liabilities, Incomes, Gains, Reserves	xxxx

(Or)

Particulars	Debit Amount	Credit Amount

**Format of Trial Balance as on December 31<sup>st</sup>, 201X**

Debit balances	Rs	Credit balances	Rs
Debtors	xxxx	Creditors	xxxx
All assets	xxxx	All liabilities	xxxx
All expenses	xxxx	All incomes and gains	xxxx
All losses	xxxx	Profits account	xxxx
Purchases	xxxx	Loan account	xxxx
Sales returns	xxxx	Bank over draft	xxxx
Drawings	xxxx	Sales	xxxx
stock	xxxx	Purchase returns	xxxx
Bills receivables	xxxx	Provision for doubtful debts	xxxx
Prepaid expenses	xxxx	Provision for discount on debtors	xxxx
Incomes receivables	xxxx	All reserves and surpluses	xxxx
All intangible assets	xxxx	Bills payables	xxxx
	xxxx	Outstanding expenses	xxxx
	xxxx	Incomes received in advance	xxxx
	xxxx	Capital	xxxx
	xxxx		xxxx

## BEFA UNIT IV

Prepare the Trial Balances for the following examples:

**Example 1. Prepare a trial balance as on 31-12-2014 from the below information.**

Particulars	Rs	Particulars	Rs
Sundry debtors	32000	Bills payable	7500
Stock	22000	Purchases	218870
Cash in hand	35	Cash at bank	1545
Plant and machinery	17500	Sundry creditors	10650
Trade expenses	1075	Sales	234500
Salaries	2225	Carriage outward	400
Rent	900	Discounts (Dr)	1100
Capital	79500	Premises	34500

**Solution:**

**Trial Balance as on 31-12-2014**

Debit balances	Rs	Credit balances	Rs
Sundry debtors	32000	Bills payable	7500
Stock	22000	Sales	234500
Cash in hand	35	Sundry creditors	10650
Plant and machinery	17500	Capital	79500
Trade expenses	1075		
Cash at bank	1545		
Rent	900		
Salaries	2225		
Purchases	218870		
Carriage outward	400		
Discounts	100		
Premises	34500		
	<b>332150</b>		<b>332150</b>

**Example 2. Make a trial balance from the below balances of accounts.**

Particulars	Rs	Particulars	Rs
Capital	100000	Machinery	30000
Stock	16000	Wages	50000
Carriage inward	500	Salaries	5000
Factory rent	2400	Repairs	400
Fuel and power	2500	Buildings	40000
Sundry debtors	20000	Sales	203600
Purchases	122000	Creditors	12500
Returns outwards	2000	Returns inwards	3600
Drawings	2000	Discount allowed	750

## BEFA UNIT IV

Discount received	250	Office expenses	1000
Manufacturing expenses	600	Bills payable	3000
Bills receivable	5000	Cash in hand	2400
Cash at bank	15400	Office rent	1800

**Solution:**

**Trial Balance as on -----**

<b>Debit balances</b>	<b>Rs</b>	<b>Credit balances</b>	<b>Rs</b>
Machinery	30000	Capital	100000
Stock	16000	Sales	203600
Wages	50000	Creditors	12500
Carriage inward	500	Returns outwards	2000
Salaries	5000	Discount received	250
Factory rent	2400	Bills payable	8500
Repairs	400		
Fuel and power	2500		
Buildings	40000		
Sundry debtors	20000		
Purchases	122000		
Returns inwards	3600		
Drawings	2000		
Discounts allowed	750		
Office expenses	1000		
Manufacturing expenses	600		
Bills receivable	5000		
Cash in hand	2400		
Cash at bank	15400		
Office rent	1800		
	<b>321350</b>		<b>321350</b>

## FINAL ACCOUNTS

In every business, the business man is interested in knowing whether the business has resulted in profit or loss and what the financial position of the business is at a given time. In brief, he wants to know (i)The profitability of the business and (ii) The soundness of the business.

The trader can ascertain this by preparing the final accounts. The final accounts are prepared from the trial balance. Hence the trial balance is said to be the link between the ledger accounts and the final accounts. The final accounts of a firm can be divided into two stages. The first stage is preparing the trading and profit and loss account and the second stage is preparing the balance sheet.

## **BEFA UNIT IV**

### **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.

Finally, a ledger may be defined as a summary statement of all the transactions relating to a person , asset, expense or income which have taken place during a given period of time. The up-to-date state of any account can be easily known by referring to the ledger.

### **PROFIT AND LOSS ACCOUNT:**

The business man is always interested in knowing his net income or net profit. Net profit represents the excess of gross profit plus the other revenue incomes over administrative, sales, Financial and other expenses. 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.

#### **Format of Trading and Profit & Loss A/C of .....for the year ending .....**

Particulars	Amount	Particulars	Amount
To Opening stock	xxxx	By Sales	xxxx
To Purchases	xxxx	Less: Returns	xxxx
Less: Returns	xxxx	By Closing stock	xxxx
To Carriage inwards	xxxx	By Gross loss (c/d)	xxxx
To Freight, cartage	xxxx		
To Customs duty	xxxx		
To Clearing charges	xxxx		
To Octroi	xxxx		
To Wages	xxxx		
To Gas, water, coal, light	xxxx		
To Factory rent	xxxx		
To Works manager salary	xxxx		
To Factory supervision	xxxx		
To consumable stores	xxxx		
To Plant depreciation	xxxx		
To Gross profit (c/d)	xxxx		
	xxxx		xxxx
To Gross loss(b/d)	xxxx	By Gross profit(b/d)	xxxx
To Salaries	xxxx	By Discount received	xxxx
To Rent, Taxes	xxxx	By Interest received	xxxx
To Insurance	xxxx	By Dividend received	xxxx
To Printing stationery	xxxx	By Rent received	xxxx

## BEFA UNIT IV

To Advertisement	xxxx	By Commission received	xxxx
To Carriage outward	xxxx	By Net loss (c/d)	xxxx
To Bad debts	xxxx		xxxx
To Repairs	xxxx		xxxx
To Depreciation	xxxx		xxxx
To Discount allowed	xxxx		xxxx
To Commission allowed	xxxx		xxxx
To Interest paid	xxxx		xxxx
To Provision for doubtful debts	xxxx		xxxx
To Postage	xxxx		xxxx
To General expenses	xxxx		xxxx
To Net profit (c/d)	xxxx		xxxx
	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.

A balance sheet is an item wise list of assets, liabilities and proprietorship of a business at a certain state.

**Balance Sheet of.....company as on .....**

<b>Capital &amp; Liabilities</b>	<b>Amount</b>	<b>Assets</b>	<b>Amount</b>
Capital	xxxx	Land and buildings	xxxx
<b>Add: Net profit</b>	<u>xxxx</u>	Furniture	xxxx
	xxxx	Plant and machinery	xxxx
<b>Less: Drawings</b>	<u>xxxx</u>	Land	xxxx
Loans	xxxx	Vehicles	xxxx
Bank Over Draft	xxxx	Debtors	xxxx
Bills payable	xxxx	Investments	xxxx
Creditors	xxxx	Bills receivables	xxxx
Outstanding expenses	xxxx	Goodwill	xxxx
Incomes received in advance	xxxx	Patents	xxxx
All reserves	xxxx	Copyright	xxxx
		Trade marks	xxxx
		Prepaid expenses	xxxx
		Incomes receivables	xxxx
		Securities	xxxx
		Closing stock	xxxx
		Cash in hand	xxxx
		Cash at bank	xxxx
	xxxx		xxxx

**BEFA UNIT IV**  
**IMPORTANT ADJUSTMENTS:**

**1. Outstanding expenses**

- a) Add to respective expense account in Trading & Profit & Loss account
- b) Show as a liability in Balance Sheet

Note:- If it is given only in trial balance, show as a liability in the balance sheet

**2. Prepaid expenses**

- a) Deduct from the respective expenses account in Trading and P/L account
- b) Show as an asset in Balance Sheet

Note:- If it is given only in trial balance, show only as an asset in B/S

**3. Accrued incomes or incomes receivables**

- a) Add to the respective income A/C in P/L Account
- b) Show as an asset in B/S

Note:- If it is only given in trial balance, show as an asset in B/S

**4. Incomes received in advance**

- a) Deduct from the respective income A/C in P/L Account
- b) Show as a liability in B/S

Note:- It is given only in trial balance, show as a liability in B/S

**5. Closing stock**

- a) Show on the credit side of trading A/C
- b) Show as an asset in B/S

Note:- If it is given only in trial balance, show as an asset in B/S

**6. Interest on capital**

## **BEFA UNIT IV**

a) Show on the debit side of P/L A/C

b) Add to capital in B/S

Note:- If it is given only in trial balance, show only in P/L A/C

### **7. Depreciation**

a) Show on the debit side of P/L A/C

b) Deduct from respective asset in B/S

Note:- If it is given only in trial balance, show only on the debit side of P/L A/C

### **8. I) Bad debts ( when given only in adjustments)**

a) Show on the debit side of P/L A/C

b) Deduct from debtors in B/S

### **II) Bad debts ( when given only in trial balance )**

Show on the debit side of P/L A/C only

### **III) Bad debts ( when given in both trial balance and adjustments)**

a) Add “Bad debts given in adjustments” to “Bad debts in trial balance” on the debit side of P/L A/C

b) Deduct “Bad debts in adjustments” from the debtors in B/S

### **9. Provision/Reserve for bad debts (RBD)**

#### **A) When RBD is given only in trial balance**

a) Deduct from the debtors in B/S

#### **B) When RBD is given only in adjustments**

a) Show on the debit side of P/L A/C

b) Deduct from the debtors in B/S

## **BEFA UNIT IV**

### C) When RBDs are given in both trial balance (RBD old) and adjustments (RBD New)

- a) Compare both RBDs, show the difference on the debit side of P/L A/C if RBD new is excess than RBD old. Show the difference on the credit side of P/L A/C in RBD old is excess than RBD new.
- b) Deduct always only RBD new from debtors in B/S

### **PROCEDURE FOR PREPARING TRADING ACCOUNT**

1. Show opening stock and net purchases ( purchases less purchase returns) on the debit side.
2. Show net sales (sales – sales returns) and the closing stock given in the adjustments on the credit side.
3. Show all the direct expenses with adjustments on the debit side.
4. Balance the account.

### **PROCEDURE FOR PREPARING PROFIT AND LOSS ACCOUNT**

1. Show all the remaining expenses with adjustments on the debit side.
2. Show all the remaining incomes with adjustments on the credit side
3. See whether all the adjustments are taken once or not.
4. Balance the account.

### **PROCEDURE FOR PREPARING BALANCE SHEET**

1. Show adjustments (Net profit/loss, Drawings and Interest on capital given in adjustments) to the capital on liabilities side.
2. Show all the liabilities with adjustments on the liabilities side.
3. Show all the assets with adjustments on the assets side.
4. See whether all items of trial balance are taken once and whether all adjustments are taken twice.
5. Add both the columns of assets and liabilities.

## **BEFA UNIT IV**

**Example 1: From the following trial balance and additional information of Mr. Arun, prepare his final accounts for the year ending 31-3-2015.**

<b>Particulars</b>	<b>Rs</b>	<b>Particulars</b>	<b>Rs</b>
Building	280000	Capital	250000
Furniture	60000	Sales	265000
Opening stock	25000	Bank loan	100000
Advertising	5000	Commission	6000
Salaries	14000	Creditors	8000
Wages	3000		
Purchases	190000		
Discount	4000		
Bad debts	2000		
Interest on loan	6000		
Returns inwards	10000		
Debtors	30000		
	629000		629000

**Adjustments:**

1. Stock on 31-3-2015 was Rs. 35000.
2. Wages outstanding Rs. 1000.

## BEFA UNIT IV

**Solution: Trading and Profit & Loss A/C of Mr. Kiran for the year ending 31-3-2015.**

Dr	Cr		
Particulars	Amount	Particulars	Amount
To Opening Stock	25000	By Sales	265000
To Purchases	190000	Less: Returns	<u>10000</u>
To Wages	3000	By Closing Stock	35000
<b>Add: Outstanding</b>	<b>1000</b>		
To Gross Profit (b/d)	71000		
	<b>290000</b>		<b>29000</b>
To Salary	14000	By Gross Profit (c/d)	71000
To Advertisement	5000	By Commission	6000
To Discount	4000		
To Interest on loan	6000		
To Bad debts	2000		
To Net Profit (c/d)	46000		
	<b>77000</b>		<b>77000</b>

**Balance Sheet of Mr. Arun as on 31-3-2015.**

Liabilities & Capital	Amount	Assets	Amount
Capital	250000	Building	280000
<b>Add: Net Profit</b>	<b>46000</b>	Furniture	60000
Outstanding wages	1000	Debtors	30000
Bank loan	100000	Closing Stock	35000
Creditors	8000		
	<b>405000</b>		<b>405000</b>

**Example 2:** From the following data and additional information of Mr. Kiran, prepare his final accounts for the year ending 31-3-2015.

Building	70000	Carriage inwards	1291
Furniture	1640	Establishment expenses	2135
Debtors	15600	Carriage outwards	800
Creditors	18852	Insurance	783
Stock	15040	Interest (Cr)	340
Cash in hand	988	Bad debts	613
Cash at bank	24534	Audit fee	400
Bills receivables	5844	General expenses	3050
Purchases	85522	Discount (Dr)	945
Sales	121850	Investments	8922
Capital	92000	Returns inwards	285
Bills payable	6250	Rent	900

**Adjustments:**

1. Stock on 31-3-2015 was Rs. 35000.
2. Prepaid insurance Rs. 100.
3. Depreciation on furniture Rs. 10%
4. Interest accrued but not received Rs. 100

## BEFA UNIT IV

**Solution: Trading and Profit & Loss A/C of Mr. Kiran for the year ending 31-3-2015.**

Dr	Cr
To Opening Stock	15040
To Purchases	85522
To Carriage inward	1291
To Gross Profit (b/d)	54712
	<b>156565</b>
To Establishment expenses	2135
To Carriage outward	800
To Insurance	783
<b>Less:</b> Prepaid	<b>100</b>
To Bad debts	613
To Audit fee	400
To General expenses	3050
To Discount	945
To Rent	900
To Depreciation on plant	164
To Net Profit (c/d)	45462
	<b>55152</b>
By Sales	121850
<b>Less:</b> Returns	<b>285</b>
By Closing Stock	35000
	<b>156565</b>
By Gross Profit (c/d)	54712
By Interest	340
<b>Add:</b> Interest to be received	<b>100</b>
	440

### Balance Sheet of Mr. Kiran as on 31-3-2015.

Liabilities & Capital	Amount	Assets	Amount
Capital	92000	Building	70000
<b>Add:</b> Net Profit	<b>45462</b>	Furniture	1640
Creditors	18852	<b>Less:</b> Depreciation	164
Bills payables	6250	Debtors	1476
	<b>162564</b>	Cash in hand	15600
	<b>162564</b>	Cash at bank	988
	<b>162564</b>	Bills receivables	24534
	<b>162564</b>	Investments	5844
	<b>162564</b>	Closing stock	8922
	<b>162564</b>	Prepaid insurance	35000
	<b>162564</b>	Interest accrued	100
	<b>162564</b>		100

## BEFA UNIT IV

**Example 3:** From the following trial balance and additional information, prepare final accounts for the year ending 31-12-2014.

Particulars	Rs	Particulars	Rs
Sundry debtors	64000	Discount received	9000
Stock (1-1-2014)	44000	Bank over draft	15000
Cash in hand	3160	Long term loan	25300
Wages	35000	Sales	365000
Trade expenses	2150	Capital	150000
Gas, water, power	4450		
Sales returns	800		
Bank charges	1800		
Purchases	237740		
Advertisements	2200		
Premises	160000		
Drawings	9000		
	564300		564300

**Adjustments:**

1. Bank charges outstanding Rs.150,
2. Write off bad debts Rs. 500
3. Provide 5% for doubtful debts.

**Solution: Trading and Profit & Loss A/C for the year ending 31-12-2014.**

Dr Particulars	Amount	Cr Particulars	Amount
To Opening Stock	44000	By Sales	365000
To Purchases	237740	Less: Returns	800
To Wages	35000		
To Trade expenses	2150		
To Gas, water, power	4450		
To Gross Profit (b/d)	40860		
	364200		364200
To Bank charges	1800	By Gross Profit (c/d)	40860
Add: Outstanding	150	By Discount	9000
To Advertisements	1950		
To Bad debts	2200		
To Provision for bad debts	500		
(64000-500)x5/100	3175		
To Net Profit (c/d)	42035		
	49860		49860

## BEFA UNIT IV

### Balance Sheet as on 31-12-2014.

<b>Liabilities &amp; Capital</b>	<b>Amount</b>	<b>Assets</b>	<b>Amount</b>
Capital	150000	Debtors	64000
<b>Add:</b> Net Profit	<b>42035</b>	<b>Less:</b> Bad debts	<b>500</b>
	<b>192035</b>		<b>63500</b>
<b>Less:</b> Drawings	<b>9000</b>	<b>Less:</b> Provision for bad debts	<b>3175</b>
Bank Over Draft	15000	Cash in hand	60325
Long term loans	25300	Premises	3160
Bank charges outstanding	150		160000
	<b>223485</b>		<b>223485</b>

**Example 4:** From the following data prepare final accounts for the year ending 31-12-2014.

<b>Particulars</b>	<b>Rs</b>	<b>Rs</b>
Drawings and capital	12000	80000
Opening stock	12000	
Investments	30600	
Stationery	12000	
Carriage	3000	
Returns	6000	2600
Purchases and sales	120000	160000
Loans	2400	10000
Debtors and creditors	60000	25000
Discount allowed	2200	
Freight in	10400	
Freight out	6000	
Charity	28000	
Reserve for doubtful debts		2000
Bills payables		25000
	<b>304600</b>	<b>304600</b>

#### **Adjustments:**

1. Closing stock Rs. 20000
2. Appreciate investment by 10%
3. Maintain reserve for doubtful debts at the rate of 5%
4. Provide 5% as interest on capital

## BEFA UNIT IV

**Solution: Trading and Profit & Loss A/C for the year ending 31-12-2014.**

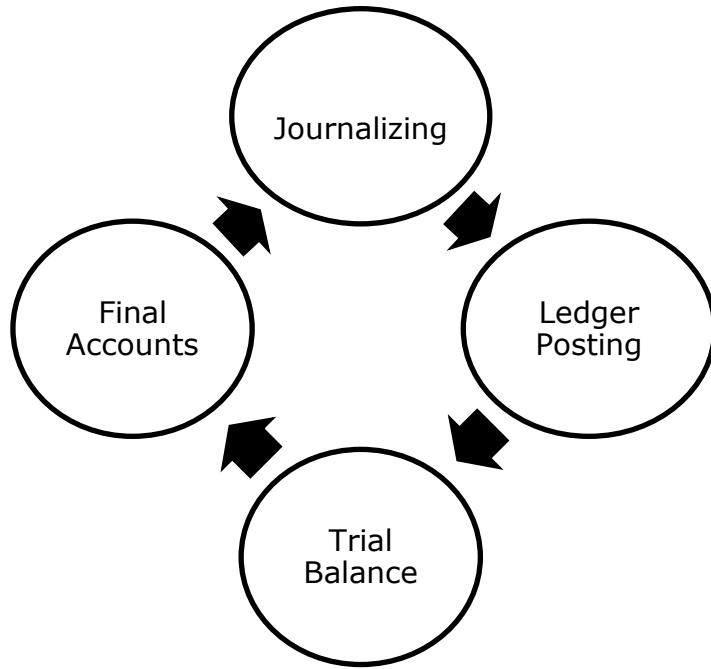
Dr	Cr		
Particulars	Amount	Particulars	Amount
To Opening Stock	12000	By Sales	160000
To Purchases	12000	Less: Returns	6000
Less: Returns	2600	By Closing stock	20000
To Freight in	10400		
To Gross Profit (b/d)	34200		
	<b>174000</b>		<b>174000</b>
To Stationery	12000	By Gross Profit (c/d)	34200
To Carriage	3000	By Investments appreciation	3060
To Discount	2200	(30600x10/100)	
To Freight out	6000	To Net Loss (c/d)	18940
To Charity	28000		
To Reserve for bad debts (3000-2000)	1000		
To Interest on capital (80000x5/100)	4000		
	<b>56200</b>		<b>56200</b>

**Balance Sheet as on 31-12-2014.**

Liabilities & Capital	Amount	Assets	Amount
Capital	80000	Investments	30600
<b>Less:</b> Net Loss	<b>18940</b>	<b>Add:</b> Appreciation	<b>3060</b>
	61060		33660
<b>Add:</b> Interest	<b>4000</b>	Loan	2400
	65060	Debtors	60000
<b>Less:</b> Drawings	<b>12000</b>	Less: Reserve for bad debts	3000
Loan	10000	Closing stock	20000
Creditors	25000		
Bills payables	25000		
	<b>113060</b>		<b>113060</b>

**ACCOUNTING /CYCLE**

Accounting process involves a sequence of activities which are repeated in every accounting period. So it is known as accounting cycle.



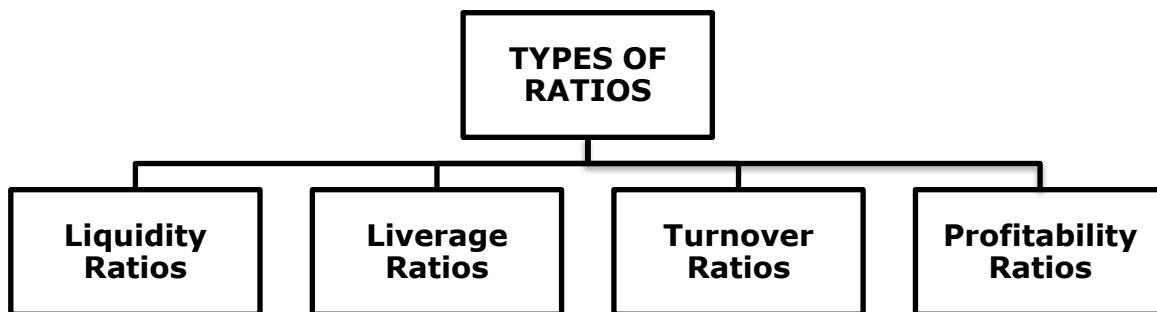
## BEFA UNIT V

### RATIOS

Absolute figures are valuable but they standing alone convey no meaning unless compared with another. Accounting ratio show inter-relationships which exist among various accounting data. When relationships among various accounting data supplied by financial statements are worked out, they are known as accounting ratios.

#### What is a ratio?

Ratio analysis is a means for financial analysis. Ratio is a mathematical relationship between two accounting figures. They show the relationship between two items in a more meaningful way which help us to draw certain conclusions. Ratios may be used to compare the previous data, to compare one firm with another firm etc. the ratios can be expressed as percentage or proportion or times based on the nature of ratio.



#### LIQUIDITY RATIOS

Liquidity ratios express the ability of the firm to meet its short-term Obligations as when they become due. Creditors are interested to know whether the firms is in a position to meet its commitments on time or not. These ratios help in identifying the danger signals for the firm in advance. The important liquidity ratios are given below.

**1. Current Ratio:-** It is also called as working capital ratio. It is the ratio between current assets and current liabilities. The firm is in comfortable position if its current ratio is 2:1. It means for every rupee of current liability, there should be two rupees worth of current assets.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

## BEFA UNIT V

**Current assets** = Cash + cash in bank + marketable securities + short term investments + bills receivables + debtors + inventory + stock + work-in-progress + pre-paid expenses + incomes receivable (accrued income) etc.

**Current liabilities** = Expenses payable + bills payable + creditors + short term loans + income tax to be paid + dividend payable + bank overdraft + long term loans and debentures to be paid within one year + provision for tax + short term advances etc.

**2. Quick Ratio:-** It is also called as working Acid test ratio or liquid ratio. It is the ratio between quick assets and current liabilities. The firm is in comfortable position if its current ratio is 1:1. It means for every rupee of current liability, there should be one rupee worth of quick assets. Quick assets can be converted into cash quickly.

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

**Quick assets** = All current assets except stock and prepaid expenses.

**Example 1:**

From the Balance Sheet of XYZ Co. Ltd., calculate liquidity ratios.

(Rs. in thousands)

Capital & Liabilities	Amount	Assets	Amount
Preference share capital	100	Land and Buildings	225
Equity share capital	150	Plant and machinery	250
General reserve	250	Furniture and Fixtures	100
Debentures	400	Stock	250
Creditors	200	Debtors	125
Bills payable	50	Cash at Bank	250
Outstanding expenses	50	Cash in hand	125
Profit and loss account	100	Prepaid expenses	50
Bank loan(Long term)	200	Marketable securities	125
	1500		1500

## BEFA UNIT V

### Solution:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

**Current assets** = Stock + Debtors + Cash at Bank + Cash in hand + Prepaid expenses + Marketable securities.  
= 250 + 125 + 250 + 125 + 50 + 125 = 925

**Current liabilities** = Creditors + Bills payable + Outstanding expenses.  
= 200 + 50 + 50 = 300

$$\text{Current Ratio} = \frac{925}{300} = 3.08:1$$

**Quick assets** = Debtors + Cash at Bank + Cash in hand + Marketable securities.  
= 125 + 250 + 125 + 125 = 625  
**Quick Ratio** =  $\frac{625}{300} = 2.08:1$

### ACTIVITY RATIOS/TURNOVER RATIOS

Activity ratios are classed as Turnover ratios. These ratios tell how active the firm is in selling stocks, collecting money from debtors and paying to creditors. They are given below.

**1. Inventory Turnover Ratio:-** It is also called as Stock turnover ratio. It indicates the number of times the average stock is being sold during a given accounting period. The higher the ratio, the better is the performance of the firm in selling its stock. It is the rate at which inventories are converted into sales and then to cash.

$$\text{a) Inventory Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

**Cost of goods sold** = Opening stock + Purchases + Manufacturing expenses – Closing stock  
(or)  
= Sales – Gross profit

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

Note 1. When cost of goods sold is not given, sales amount should be taken into account.

2. When opening stock is not given, closing stock is considered as 'average stock'.

$$\text{b) Inventory Holding Period} = \frac{365 \text{ days}}{\text{Inventory Turnover Ratio}}$$

### Example 1:

A firm sold goods worth Rs. 500000 and its gross profit is 20% of sales value. The inventory at the beginning of the year was Rs. 16000 and at end of the year was 14000. Compute inventory turnover ratio and also the inventory holding period.

## BEFA UNIT V

### Solution:

$$\text{a) Inventory Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}} = \frac{400000}{15000} = 26.66 \text{ times}$$

**Cost of goods sold** = Sales – Gross profit = 500000 – (500000 × 20%) = 400000

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2} = \frac{16000 + 14000}{2} = 15000$$

$$\text{b) Inventory Holding Period} = \frac{365 \text{ days}}{\text{Inventory Turnover Ratio}} = \frac{365}{26.66} = 14 \text{ days}$$

**2. Debtors Turnover Ratio**:- It reveals the number of times the average debtors are collected during a given accounting period. The firms usually prepare the aged list of debtors showing the details of when to collect and how much to collect from debtors. The higher the ratio, the better is the performance of the firm in collecting money from debtors.

$$\text{a) Debtors Turnover Ratio} = \frac{\text{Net credit sales}}{\text{Average Debtors}}$$

Net Credit Sales = Credit sales – Returns

Note: 1. When credit sales are not given, total sales are taken.

$$\text{Average debtors} = \frac{\text{Opening debtors} + \text{Closing debtors}}{2}$$

Note: 1. If opening debtors are not given, closing debtors should be considered as average debtors.

$$\text{b) Debt Collection Period} = \frac{365 \text{ days}}{\text{Debtors Turnover Ratio}}$$

### Example:

A firm's sales during the year was Rs. 400000 of which 60% were credit sales. The balance of debtors at the beginning and ending year were 25000 and 15000 respectively. Calculate debtors turnover ratio of the firm. Also find out debt collection period.

### Solution:

$$\text{a) Debtors Turnover Ratio} = \frac{\text{Net credit sales}}{\text{Average Debtors}} = \frac{240000}{20000} = 12 \text{ times}$$

**Net credit sales** = Sales × 60/100 = 400000 × 60/100 = 240000

$$\text{Average debtors} = \frac{\text{Opening debtors} + \text{Closing debtors}}{2} = \frac{25000 + 15000}{2} = 20000$$

$$\text{b) Debt Collection Period} = \frac{365 \text{ days}}{\text{Debtors Turnover Ratio}} = \frac{365 \text{ days}}{12} = 30.41 \text{ days}$$

**3. Creditors Turnover Ratio**:- It reveals the number of times the average creditors are paid during a given accounting period. The firms usually prepare the aged list of creditors showing the details of when to pay and how much to pay to its creditors. It shows how promptly the firm is in a position to pay its creditors.

$$\text{a) Creditors Turnover Ratio} = \frac{\text{Net credit purchases}}{\text{Average Creditors}}$$

Net Credit Purchases = Credit Purchases – Returns

## BEFA UNIT V

Note: 1. When credit purchases are not given, total purchases are taken.

$$\text{Average creditors} = \frac{\text{Opening creditors} + \text{Closing creditors}}{2}$$

Note: 1. If opening creditors are not given, closing creditors should be considered as average creditors.

$$\text{b) Creditors Payment Period} = \frac{365 \text{ days}}{\text{Creditors Turnover Ratio}}$$

### Example:

A firm's purchases during the year was Rs. 400000 of which 50% were credit purchases. The balance of creditors at the beginning and ending year were 30000 and 10000 respectively. Calculate creditors turnover ratio of the firm. Also find out creditors payment period.

### Solution:

$$\text{a) Creditors Turnover Ratio} = \frac{\text{Net credit purchases}}{\text{Average Creditors}} = \frac{200000}{20000} = 10 \text{ times}$$

$$\text{Net credit purchases} = \text{Purchases} \times 50/100 = 400000 \times 50/100 = 200000$$

$$\text{Average creditors} = \frac{\text{Opening creditors} + \text{Closing creditors}}{2} = \frac{30000 + 10000}{2} = 20000$$

$$\text{b) Creditors Payment Period} = \frac{365 \text{ days}}{\text{Creditors Turnover Ratio}} = \frac{365 \text{ days}}{10} = 36.5 \text{ days}$$

### CAPITAL STRUCTURE RATIOS:

Capital structure ratios are also called as leverage ratios. These ratios focus on the long term solvency of the firm. The long term solvency of the firm always reflected in its ability to meet its long term commitments such as payment of interest periodically without fail, repayment of principal as and when the become due. The below are the most commonly used capital structure ratios.

**1. Debt-Equity Ratio:-** It is the ratio between outsider's funds(Debt) and insider's funds (Equity). It is a measure of solvency. This ratio is used to measure the firm's obligations to creditors in relation to the owners' funds. The standard ratio is 1:1. this means for every rupee of debt, there should be one rupee worth internal funds. A high D/E ratio implies that the creditors stake is more as compared to that of owners.

$$\text{Debt - Equity Ratio} = \frac{\text{Debt}}{\text{Equity}} = \frac{\text{Outsiders Funds}}{\text{Insider's Funds}} = \frac{\text{Long term loans}}{\text{Shareholders Funds or Net worth}}$$

**Debt** = Debentures + bonds + mortgage loan + other long term loans.

**Equity** = Equity share capital + preference share capital + capital reserve + revenue reserve + sinking fund + contingent reserve - artificial assets.

**Note:** Artificial assets = preliminary expenses + deferred revenue expenses + discount on issue of shares/ debentures + profit and loss A/C debit balance + underwriting commission

. **Example 1:** Calculate Debt – Equity ratio from the following data.

## BEFA UNIT V

Debentures Rs. 400000, Long term loans Rs. 200000, Preference share capital Rs. 100000, Equity share capital Rs. 150000, General reserve Rs. 250000, Profit & Loss account Rs. 100000.

**Solution:**

$$\text{Debt - Equity Ratio} = \frac{\text{Debt}}{\text{Equity}} = \frac{600000}{600000} = 1:1$$

**Debt** = 400000 + 200000 = 600000

**Equity** = 100000 + 150000 + 250000 + 100000 = 600000

**2. Interest Coverage Ratio**:- This ratio judges the firm's capacity to pay the interest on debt it borrows. The higher the ratio, better it is. A ratio implies that the company has no problems in paying interest.

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}} = \frac{\text{PBIT}}{\text{Interest}}$$

**EBIT** = Earnings Before Interest and Tax

**PBIT** = Profit Before Interest and Tax

**Interest** = Fixed interest on long term loans

**Example:** EBIT of a company is Rs. 560000. Its fixed commitments include payment of 10 percent on 7000 debentures of Rs. 100 each. It is subject to tax of 30 percent per annum. Calculate interest coverage ratio.

**Solution:**

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}} = \frac{560000}{70000} = 8 \text{ times}$$

**EBIT = Rs. 560000**

**Debentures Amount** = 7000 debentures x Rs. 100 each = Rs. 700000

**Fixed interest charges on debentures** =  $700000 \times 10/100 = 70000$

**3. Proprietor's Funds to Total Assets Ratio**

**Proprietors' Funds** = Equity share capital + Preference share capital + General reserve + Employee Provident Fund + profit and loss account.

**Total Assets** = Tangible assets and Current assets

$$\text{Proprietors' Funds to Total Assets Ratio} = \frac{\text{Proprietors' Funds}}{\text{Total Assets}}$$

**Proprietors' Funds** = Equity share capital + Preference share capital + General reserve + Employee Provident Fund + profit and loss account.

**Total Assets** = Tangible assets and Current assets

**Example 1:**

From the Balance Sheet of XYZ Co. Ltd., calculate liquidity ratios.

(Rs. in thousands)

Capital & Liabilities	Amount	Assets	Amount
Preference share capital	100	Land and Buildings	225
Equity share capital	150	Plant and machinery	250

## BEFA UNIT V

General reserve	250	Furniture and Fixtures	100
Debentures	400	Stock	250
Creditors	200	Debtors	125
Bills payable	50	Cash at Bank	250
Outstanding expenses	50	Cash in hand	125
Profit and loss account	100	Prepaid expenses	50
Bank loan(Long term)	200	Marketable securities	125
	1500		1500

**Solution:**

$$\text{Proprietors' Funds to Total Assets Ratio} = \frac{\text{Proprietors' Funds}}{\text{Total Assets}} = \frac{600}{1500} \times 100 = 40\%$$

$$\text{Proprietors' Funds to Total Assets} = 100 + 150 + 250 + 100 = 600$$

$$\text{Total assets} = 225 + 250 + 100 + 250 + 125 + 250 + 125 + 50 + 125 = 1500$$

### PROFITABILITY RATIOS

Profitability ratios indicate how well the firm is operating its Activities in a profitability manner. Owners want a reasonable rate of return on their investment. So, the firm has to generate profits to meet the expectations of shareholders and also for further expansion of the business. The following are the common profitability ratios.

1. **Gross Profit Ratio**:- It is the ratio between gross profit and net sales. It is expressed in percentage.

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net sales}} \times 100$$

$$\text{Gross profit} = \text{Net sales} - \text{Cost of goods sold}$$

(or)

$$= (\text{sales} + \text{closing stock}) - (\text{opening stock} + \text{purchases})$$

$$\text{Net sales} = \text{Total sales} - \text{Sales returns}$$

$$\text{Cost of goods sold} = \text{Opening stock} + \text{Net purchases} + \text{Production expenses} + \text{Closing stock}$$

(or)

$$= \text{Net sales} - \text{Gross profit}$$

**Example:** Net sales is Rs. 50000 for a firm and cost of goods sold is Rs. 20000.

Calculate gross profit ratio.

**Solution:**

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net sales}} \times 100 = \frac{30000}{50000} \times 100 = 60\%$$

$$\text{Gross profit} = \text{Net sales} - \text{Cost of goods sold} = 50000 - 20000 = 30000$$

2. **Net Profit Ratio**:- It is the ratio between net profit after tax and net sales. It is expressed in percentage.

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after tax}}{\text{Net sales}} \times 100$$

## BEFA UNIT V

**Net Profit after Tax** = (Operating Profit + Non-operating Income) – (Non-operating Expenses + Taxes)

**Operating Profit** = (Net Sales – Operating Cost)

**Operating Cost** = (Cost of goods sold + Operating expenses)

**Operating Expenses** = (Office and Administration expenses + Sales and Distribution expenses)

**(or)**

**Net Profit after Tax** = Gross profit – All expenses and losses + All incomes – Tax

**Example :** Calculate net profit ratio from the following data.

Net sales Rs. 50000

Cost of goods sold Rs. 20000

Administration Expenses Rs. 3000

Selling and Distribution expenses Rs 4000

Loss on sale of fixed assets Rs. 3000

Interest on investment received Rs. 2000

Tax 20%

**Solution:**

Particulars	Rs	Rs
Sales	50000	
<b>Less:</b> Cost of goods sold	20000	
<b>Gross Profit</b>		30000
<b>Less:</b> Administration expenses	3000	
Selling and Distribution expenses	4000	7000
<b>Net Profit</b>		23000
<b>Add:</b> Interest on investments		2000
		25000
<b>Less:</b> Loss on sale of Asset		3000
		22000
Tax 20% (22000x20/100)		4400
<b>Net Profit After Tax</b>		17600

$$\text{Net Profit Ratio} = \frac{\text{Net Profit after tax}}{\text{Net sales}} \times 100 = \frac{17600}{50000} \times 100 = 35.2\%$$

**3. Operating Ratio:-** It is the ratio between cost of goods sold plus operating expenses and net sales. It is expressed as percentage to sales.

$$\text{Operating Ratio} = \frac{\text{Operating cost}}{\text{Net sales}} \times 100$$

**Operating Cost** = (Cost of goods sold + Operating expenses)

**Operating Expenses** = (Office and Administration expenses + Sales and Distribution expenses)

**Operating Profit Ratio** = 100 – Operating Ratio

## BEFA UNIT V

**Example:** Calculate operating ratio from the following data.

Net sales Rs. 50000

Cost of goods sold Rs. 20000

Administration Expenses Rs. 3000

Selling and Distribution expenses Rs 4000

Loss on sale of fixed assets Rs. 3000

Interest on investment received Rs. 2000

Tax 20%

**Solution:**

$$\text{Operating Ratio} = \frac{\text{Operating cost}}{\text{Net sales}} \times 100 = \frac{27000}{50000} \times 100 = 54\%$$

**Operating cost** = (cost of goods sold + Operating Expenses)

$$= (20000+3000+4000) = 27000$$

**4. Return On Investment (ROI):-** This ratio is also called as Return On Capital Employed (ROCE). The firm is interested to assess the return on capital employed.

$$\text{Return On Investment} = \frac{\text{PBIT}}{\text{Net Assets (or)Capital Employed}} \times 100$$

**Profit Before Interest and Tax (PBIT)** = Gross profit – All expenses and losses  
+ All incomes

**Capital employed** = Equity share capital + Preference share capital + Reserves +  
Long term loans + Debentures – Intangible assets  
(or)  
= Fixed assets + Current assets – Current liabilities

**5. Return On Equity (ROE):-** The equity shareholders are interested to assess the return on equity capital employed.

$$\text{Return On Equity} = \frac{\text{PAT} - \text{Preference dividend}}{\text{Equity shareholders' Funds}} \times 100$$

**Equity Shareholders Funds** = Equity Share capital + Reserves and Surpluses

**6. Earnings Per Share (EPS):-** EPS is the relationship between net profit and the number of equity shares outstanding at the end of the given period.

$$\text{Earnings Per Share} = \frac{\text{PAT} - \text{Preference dividend}}{\text{No. of equity shares}}$$

**Example 1:** Given that the number of share is 10000 and the net profit after taxes for a given period is Rs. 450000, the EPS can be calculated as follows:

**Solution:**

$$\text{Earnings Per Share} = \frac{\text{PAT} - \text{Preference dividend}}{\text{No. of equity shares}} = \frac{450000 - 0}{10000} = \text{Rs. } 45$$

**7. Dividend Yield Ratio (D/Y Ratio):-** Yield means the amount of total return the investor will receive for a given period of time for the amount of his investment. Dividend yield refers to the percentage return on the price paid for shares. It is calculated as given below:

## BEFA UNIT V

$$\text{Dividend Yield Ratio} = \frac{\text{Dividend Per Share}}{\text{Market Value Per Share}} \times 100$$

**Example:** Given that current market price of a share Rs. 300; face value of the share is Rs. 100; percentage of dividend declared is 20%, the yield is;

**Solution:**

$$\text{Dividend Yield Ratio} = \frac{\text{Dividend Per Share}}{\text{Market Value Per Share}} \times 100 = \frac{20}{300} \times 100 = 6.67\%$$

$$\text{Dividend Per Share} = \text{Face value of share} * \frac{20}{100} = 100 * \frac{20}{100} = 20$$

**8. Price Earnings Ratio (P/E Ratio):-** This is the ratio of the market value of a share and Earnings Per Share.

$$\text{Price - Earnings Ratio} = \frac{\text{Market Value of Equity Share}}{\text{Earnings per Share}}$$

**Example:** Given that market price of a share is Rs. 340 and EPS is 10, calculate P/E ratio.

**Solution:**

$$\text{Price - Earnings Ratio} = \frac{\text{Market Value of Equity Share}}{\text{Earnings per Share}} = \frac{340}{10} = 34$$

**Problem 1:- The following an extract of a balance sheet of a company during the last year. Compute current ratio and quick ratio.**

Land and buildings	50000	Plant and machinery	100000
Furniture and fixtures	25000	Closing stock	25000
Sundry debtors	12500	Wages prepaid	2500
Sundry creditors	8000	Rent outstanding	2000

**Solution:**

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current assets} = \text{Sundry debtors} + \text{Closing stock} + \text{Wages prepaid}.$$

$$= 12500 + 25000 + 2500 = 40000$$

$$\text{Current liabilities} = \text{Sundry creditors} + \text{Rent outstanding}$$

$$= 8000 + 2000 = 1000 \quad 40000$$

$$\text{Current Ratio} = \frac{40000}{10000} = 4:1$$

## BEFA UNIT V

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Quick assets} = \text{Sundry debtors} \\ = 12500$$

$$\text{Current liabilities} = \text{Sundry creditors} + \text{Rent outstanding} \\ = 8000 + 2000 = 10000$$

$$\text{Quick Ratio} = \frac{12500}{10000}$$

$$\text{Quick Ratio} = 1.25:1$$

**Problem 2:- Calculate inventory turnover ratio and Average period of holding the stocks.**

Sundry debtors	45000	Closing stock	30000
Sales	400000	Sales returns	20000
Stock as on 1-1-2014	40000	Stock as on 31-12-2014	60000

**Solution:**

a) **Inventory Turnover Ratio** =  $\frac{\text{Cost of goods sold}}{\text{Average stock}}$

**Cost of goods sold** = Opening stock + purchases + manufacturing expenses - closing stock  
(or)

$$= \frac{\text{Sales} - \text{Gross Profit}}{\text{Opening stock} + \text{Closing stock}}$$

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2}$$

**Note:-** 1. When cost of goods sold is not given, sales amount should be taken into account.

## BEFA UNIT V

a) **Inventory Turnover Ratio** = 
$$\frac{\text{Cost of goods sold}}{\text{Average stock}}$$

$$\text{Average stock} = \frac{\text{Opening stock} + \text{Closing stock}}{2} = \frac{40000 + 60000}{2} = \text{Rs. } 50000$$

$$\text{Inventory Turnover Ratio} = \frac{400000}{50000} = 8 \text{ times}$$

b) **Inventory holding period** = 
$$\frac{365 \text{ days}}{\text{Inventory Turnover Ratio}} = \frac{365}{8} = 46 \text{ days}$$

**Problem 3:- Given the following data, calculate debtors and creditors turnover ratios.**

Debtors as on 1-1-2014	8000	Debtors as on 31-12-2014	16000
Creditors as on 1-1-2014	32000	Purchases (60% credit)	150000
Furniture and fixtures	25000	Cash	5000
Creditors as on 31-12-2015	26000		
Sales (75% credit)	250000		

**Solution:**

a) **Debtors Turnover Ratio** = 
$$\frac{\text{Net credit sales}}{\text{Average debtors}}$$

$$\text{Net credit sales} = \text{Sales} \times 60/100 = 250000 \times 75/100 = 187500$$

$$\begin{aligned}\text{Average debtors} &= (\text{Opening debtors} + \text{closing debtors}) / 2 \\ &= (8000 + 16000) / 2 = 12000\end{aligned}$$

$$\text{Debtors Turnover Ratio} = \frac{187500}{12000} = 15.6 \text{ times}$$

b) **Debtors Collection Period** = 
$$\frac{365 \text{ days}}{\text{Debtors Turnover Ratio}} = \frac{365}{15.6} = 23.36 \text{ days}$$

## BEFA UNIT V

a) **Creditors Turnover Ratio** = 
$$\frac{\text{Net credit purchases}}{\text{Average Creditors}}$$

$$\text{Net credit purchases} = \text{Purchases} \times 60/100 = 150000 \times 60/100 = 90000$$

$$\begin{aligned}\text{Average creditors} &= (\text{Opening creditors} + \text{closing creditors}) / 2 \\ &= (32000 + 26000) / 2 = 29000\end{aligned}$$

$$\text{Creditors Turnover Ratio} = \frac{90000}{29000} = 3.1 \text{ times}$$

$$\text{b) Creditors payment Period} = \frac{365 \text{ days}}{\text{Creditors Turnover Ratio}} = \frac{365}{3.1} = 117.74 \text{ days}$$

**Problem 4:- Given the following data, calculate current ratio and quick ratio**

Capital	360000	Debentures	420000
Reserve fund	240000	Creditors	36000
Bank over draft	60000	Rent outstanding	6000
Provision for taxation	78000	Land and buildings	440000
Plant and machinery	235000	Furniture and fixtures	140000
Motor vehicles	105000	Stock	60000
Sundry debtors	90000	Short term investments	75000
Cash at bank	30000	Cash in hand	25000

## BEFA UNIT V

### Solution:

**Current assets** = Sundry debtors + Cash at bank + Stock + Short term investments + cash in hand

$$= 90000 + 30000 + 60000 + 75000 + 25000 = 280000$$

**Current liabilities** = Creditors + Rent outstanding + Bank over draft + Provision for taxation

$$= 36000 + 6000 + 60000 + 78000 = 180000$$

$$\text{Current Ratio} = \frac{\text{Current assets}}{\text{Current Liabilities}} = \frac{280000}{180000} = 1.55:1$$

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

**Quick assets** = Sundry debtors + Cash at bank + Short term investments + cash in hand

$$= 90000 + 30000 + 75000 + 25000 = 220000$$

**Current liabilities** = Creditors + Rent outstanding + Bank over draft + Provision for taxation

$$= 36000 + 6000 + 60000 + 78000 = 180000$$

$$\text{Quick Ratio} = \frac{220000}{180000}$$

$$\text{Quick Ratio} = 1.22:1$$

**Problem 5:- Given the following data, calculate Debt-equity ratio, Interest coverage ratio and Proprietary funds to total assets ratio.**

Liabilities and Capital	Rs	Assets	Rs
<b>Share Capital:</b>			
10% Preference Capital	60000	Motor vehicles	105000
Equity shares Capital	300000	Plant and machinery	235000
Reserve fund	240000	Sundry debtors	90000
Bank over draft	60000	Land and buildings	440000
Provision for taxation	78000	Furniture and fixtures	140000
15% Debentures	420000	Stock	60000
Creditors	36000	Short term investments	75000
Rent outstanding	6000	Cash in hand	25000
	1200000	Cash at bank	30000
			1200000

EBIT = Rs. 204000

## BEFA UNIT V

**Solution:**

$$\text{Debt-Equity Ratio} = \frac{\text{Debt}}{\text{Equity}} = \frac{\text{Outsider's funds}}{\text{Insider's funds}} = \frac{\text{Long term loans}}{\text{Share holders funds/Net worth}}$$

**Debt** = Debentures = 420000

$$\begin{aligned}\text{Equity} &= \text{Equity capital} + \text{Reserve fund} \\ &= 300000 + 240000 = 540000\end{aligned}$$

$$\text{Debt-Equity Ratio} = \frac{420000}{540000} = 0.77: 1$$

$$\text{Interest Coverage Ratio} = \frac{\text{EBIT}}{\text{Interest}} = \frac{\text{PBIT}}{\text{Interest}}$$

$$\text{Interest} = \text{Debentures} \times 15/100 = 420000 \times 15/100 = 63000$$

$$\text{Interest Coverage Ratio} = \frac{204000}{63000} = 3.23 \text{ times}$$

$$\text{Proprietors' funds to Total Assets Ratio} = \frac{\text{Proprietors' Funds}}{\text{Total Assets}}$$

$$\begin{aligned}\text{Proprietors' Funds} &= \text{Preference share capital} + \text{Equity share capital} + \text{Reserve fund} \\ &= 60000 + 300000 + 240000 \\ &= 600000\end{aligned}$$

$$\text{Total Assets} = 1200000$$

$$\text{Proprietors' funds to Total Assets Ratio} = \frac{600000}{1200000} \times 100 = 50\%$$

**Example 6: Calculate Gross Profit Margin, Net Operating Margin and Operating Ratio given the following information.**

Sales	1000000	Cost of goods sold	600000
-------	---------	--------------------	--------

Selling and Administrative costs	200000	Depreciation	100000
----------------------------------	--------	--------------	--------

## BEFA UNIT V

### Solution:

$$\text{Gross Profit Margin} = \text{Sales} - \text{Cost of Goods Sold} = 1000000 - 600000 = 400000$$

$$\begin{aligned}\text{Net Profit Margin} &= \text{Gross Profit} - \text{Selling and Administration costs} - \text{Depreciation} \\ &= 1000000 - 600000 = 400000\end{aligned}$$

#### Operating Cost

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}}$$

$$\begin{aligned}\text{Operating Cost} &= (\text{Cost of goods sold} + \text{Operating expenses}) \\ &= (600000 + 200000 + 100000) = 900000\end{aligned}$$

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Sales}} \times 100 = \frac{900000}{1000000} \times 100 = 90\%$$

**Example 7:** prepare a balance sheet from the following particulars.

Stock velocity : 6

Gross profit margin : 20%

Capital turnover ratio : 2

Fixed assets turnover : 4

Debt collection period : 2 months

Creditors payment period : 73 days

Gross profit : Rs. 60000

Excess of closing stock over opening was : Rs. 5000

### Solution

$$\begin{aligned}\text{Gross Profit} \\ \text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \\ &= \frac{60000}{\text{Net Sales}} \\ 20\% &= \frac{60000}{\text{Net Sales}}\end{aligned}$$

$$\text{Net Sales} = \text{Gross Profit} \times \text{Gross Profit Ratio} = 60000 \times 20\% = 300000$$

$$\begin{aligned}\text{Cost of Goods Sold} \\ \text{Stock Turnover Ratio} &= \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \\ &= \frac{300000}{\text{Average Stock}}\end{aligned}$$

$$\text{Cost of Goods Sold} = \text{Net Sales} - \text{Gross Profit} = 300000 - 60000 = 240000$$

$$\begin{aligned}\text{Cost of Goods Sold} &= 240000 \\ \text{Average Stock} &= \frac{\text{Cost of Goods Sold}}{\text{Stock Turnover Ratio}} = \frac{240000}{6} = 40000\end{aligned}$$

## BEFA UNIT V

Opening Stock + Closing Stock

$$\text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

Let us suppose that Opening Stock is 'x', then

$$x + (x + 5000) \\ 40000 = \frac{x + (x + 5000)}{2} \\ 40000 \times 2 = 2x + 5000 \\ 80000 - 5000 = 2x \\ 75000 \\ x = \frac{75000}{2} = 37500$$

Opening Stock = 37500

Closing Stock = Opening Stock + 5000

Closing Stock = 37500 + 5000 = 42500

$$\text{Capital Turnover Ratio} = \frac{\text{Cost of sales}}{\text{Capital}}$$

$$\text{Capital} = \frac{\text{Cost of sales}}{\text{Capital Turnover Ratio}}$$

$$\text{Capital} = \frac{240000}{2} = 12000$$

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{sales}}{\text{Fixed Assets}}$$

$$\text{Fixed Assets} = \frac{\text{sales}}{\text{Fixed Assets Turnover Ratio}}$$

$$\text{Capital} = \frac{300000}{4} = 75000$$

## BEFA UNIT V

**365 Days/12 Months**

$$\text{Debtors Collection Period} = \frac{365}{\text{Debtors Turnover Ratio}}$$

$$\text{Debtors Turnover Ratio} = \frac{12 \text{ Months}}{\text{Debt Collection Period}} = \frac{12}{2} = 6$$

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit sales/Sales}}{\text{Average Debtors/Debtors}}$$

$$\text{Debtors} = \frac{\text{Sales}}{\text{Debtors Turnover Ratio}} = \frac{30000}{6} = 50000$$

$$\text{Creditors Payment Period} = \frac{365 \text{ Days/12 Months}}{\text{Creditors Turnover Ratio}}$$

$$\text{Creditors Turnover Ratio} = \frac{12 \text{ Months}}{\text{Creditors Payment Period}} = \frac{365}{73} = 5$$

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Purchases/Purchases}}{\text{Average Creditors/Creditors}}$$

**Purchases = Sales + Closing Stock – Opening Stock – Gross Profit**

$$\text{Purchases} = 300000 + 42500 - 37500 - 60000 = 245000$$

$$\text{Creditors} = \frac{\text{Purchases}}{\text{Creditors Turnover Ratio}} = \frac{245000}{5} = 49000$$

### Balance Sheet

Liabilities & Capital	Amount	Assets	Amount
Capital	120000	Fixed Assets	75000
Creditors	49000	Debtors	50000
		Closing Stock	42500
		Cash in hand(b/f)	1500
	169000		169000

### **USES OR ADVANTAGES OR IMPORTANCE OF RATIO ANALYSIS**

Ratio Analysis stands for the process of determining and presenting the relationship of items and groups of items in the financial statements. It is an important technique of financial analysis. It is a way by which financial stability and health of a concern can be judged. The following are the main uses of Ratio analysis:

- (a) Useful in financial position analysis: Accounting reveals the financial position of the concern. This helps banks, insurance companies and other financial institution in lending and making investment decisions.
- (ii) Useful in simplifying accounting figures: Accounting ratios simplify, summaries and systematic the accounting figures in order to make them more understandable and in lucid form.
- (iii) Useful in assessing the operational efficiency: Accounting ratios helps to have an idea of the working of a concern. The efficiency of the firm becomes evident when analysis is based on accounting ratio. This helps the management to assess financial requirements and the capabilities of various business units.
- (iv) Useful in forecasting purposes: If accounting ratios are calculated for number of years, then a trend is established. This trend helps in setting up future plans and forecasting.
- (v) Useful in locating the weak spots of the business: Accounting ratios are of great assistance in locating the weak spots in the business even through the overall performance may be efficient.
- (vi) Useful in comparison of performance: Managers are usually interested to know which department performance is good and for that he compare one department with the another department of the same firm. Ratios also help him to make any change in the organisation structure.

### **LIMITATIONS OF RATIO ANALYSIS**

1. **False results if based on incorrect accounting data:** Accounting ratios can be correct only if the data (on which they are based) is correct. Sometimes, the information given in the financial statements is affected by window dressing, i. e. showing position better than what actually is.
2. **No idea of probable happenings in future:** Ratios are an attempt to make an analysis of the past financial statements; so they are historical documents. Now-a-days keeping in view the complexities of the business, it is important to have an idea of the probable happenings in future.
3. **Variation in accounting methods:** The two firms' results are comparable with the help of accounting ratios only if they follow the some accounting methods or bases. Comparison will become difficult if the two concerns follow the different methods of providing depreciation or valuing stock.

## **BEFA UNIT V**

4. **Price level change:** Change in price levels make comparison for various years difficult.
5. Only one method of analysis: Ratio analysis is only a beginning and gives just a fraction of information needed for decision-making so, to have a comprehensive analysis of financial statements, ratios should be used along with other methods of analysis.
6. **No common standards:** It is very difficult to by down a common standard for comparison because circumstances differ from concern to concern and the nature of each industry is different.
7. **Different meanings assigned to the some term:** Different firms, in order to calculate ratio may assign different meanings. This may affect the calculation of ratio in different firms and such ratio when used for comparison may lead to wrong conclusions.
8. **Ignores qualitative factors:** Accounting ratios are tools of quantitative analysis only. But sometimes qualitative factors may surmount the quantitative aspects. The calculations derived from the ratio analysis under such circumstances may get distorted.
9. **No use if ratios are worked out for insignificant and unrelated figure:** Accounting ratios should be calculated on the basis of cause and effect relationship. One should be clear as to what cause is and what effect is before calculating a ratio between two figures.

## **FUNDS FLOW ANALYSIS**

### **INTRODUCTION**

Balance sheet and profit and loss A/C show the financial status and profitability of the firm respectively. Balance sheet discloses the value of fixed assets as well as current assets, the decrease or increase of all assets and liabilities can be ascertained by comparing with the previous balance sheet. But it does not disclose the reasons for increasing or decreasing the assets/liabilities. However, the “ Funds flow statement” is to be prepared to know such reasons. In this concept fund means “ net working”.

### **What is ‘FUND’ and ‘FLOW’ ?**

A layman can describe word FUND as cash or cash equivalents. In technical terms, the word **FUND means ‘Net Working Capital’**.

Funds may mean:

- Cash only
- Net working capital, i.e. current assets less current liabilities
- Total resources or total funds

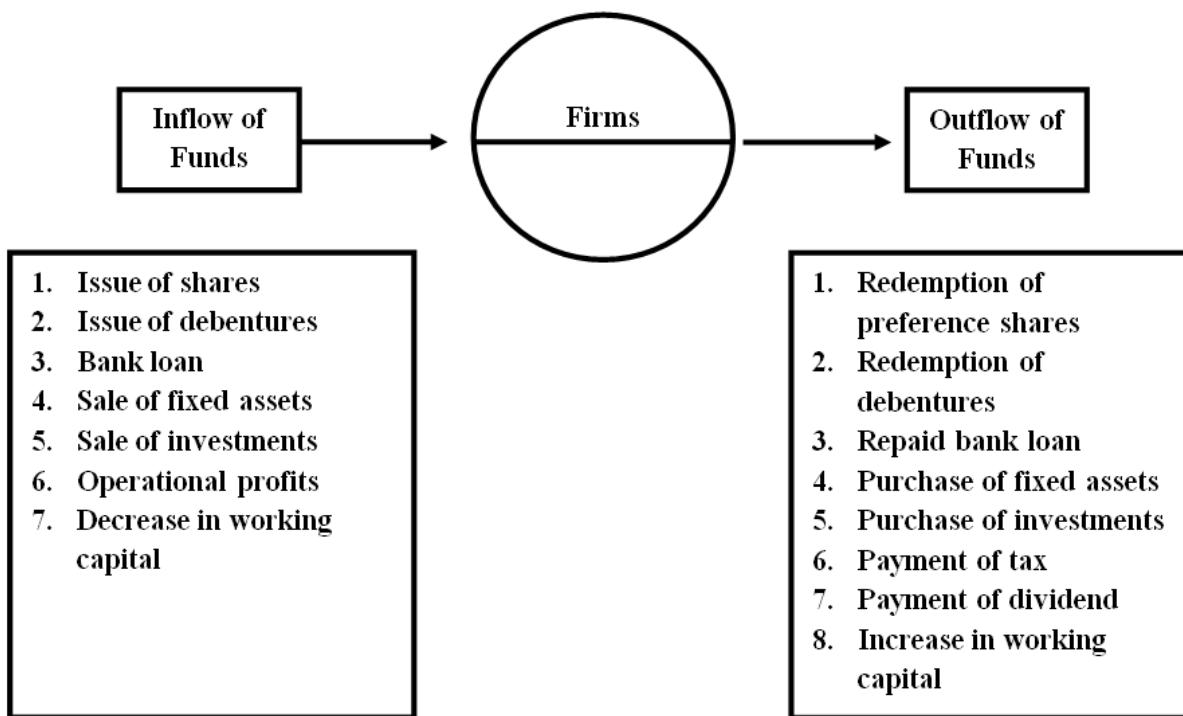
## BEFA UNIT V

- Internal resources only
- Net worth, i.e. owner's equity capital plus reserves

The term **FLOW** refers to change or transfer. The term 'Fund flow' or 'Flow of funds' may thus mean transport of:

- One asset to another
- One liability to another
- Assets to liabilities or vice versa
- The changes in working capital is also an inflow or outflow of funds, and thus it is called fund flow.

“ Fund” is considered as working capital while preparing “ Funds flow statement”. Fund flow means change in the working capital. In other words, any increase or decrease in working capital means “flow of funds”. Any transaction which has one current account and the other non-current account results in change in the working capital.



**Current accounts:-** Current assets accounts and current liabilities accounts are called current accounts. Assets which are converted into cash within a year are called current assets. Liabilities which are to be paid within a year are called current liabilities.

**Non-current account:-** Accounts which are not current accounts are called non-current accounts. For example, fixed assets accounts long term liabilities accounts, and capital & reserves accounts.

## BEFA UNIT V

### Preparation of funds flow statements

Funds flow statement is prepared by observing the items taken place during the periods of two balance sheets along with the adjustments into consideration.

Three statements are to be prepared.

- I. Statement of changes in working capital
- II. Statement of funds from operations
- III. Funds flow statement

**I. Statement of changes in working capital:-** this statement reveals the net change in the working capital (CA – CL) . Current assets and current liabilities are as follows.

<b>Current Assets</b>	<b>Current Liabilities</b>
1.Cash in hand	1. Bills payables
2. Cash at bank	2. Creditors
3. Bills receivables	3. Outstanding expenses
4. Debtors	4. Dividends to be paid
5. Short term advances	5. Bank over draft
6. Short term investments	6. Provisions for current assets (ex: RBD)
7. Inventories or stock	7. Short-term loans
8. Incomes to be received	8. Taxes to be paid
9. Loose tools, etc.	9. Provision for tax (current liability or appropriation of profits)
10. Prepaid expenses	10. Proposed dividend (current liability or appropriation of profits), etc.

### FORMAT OF STATEMENT OF CHANGES IN WORKING CAPITAL

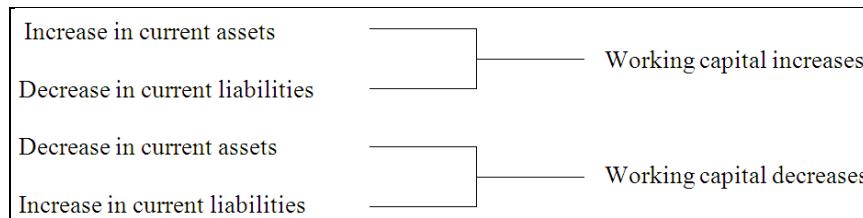
Particulars	Previous year	Current year	<b>Working capital</b>	
			Increase	Decrease
<b>A. Current Assets</b>				
Cash in hand	xxx	xxx		
Cash at bank	xxx	xxx		
Bills receivables	xxx	xxx		
Debtors etc	xxx	xxx		
A	xxx	xxx		
<b>B. Current Liabilities</b>				
Bills payables	xxx	xxx		
Creditors	xxx	xxx		
Bank overdraft etc.	xxx	xxx		
xxx	xxx			

## BEFA UNIT V

<b>Working capital (A – B)</b>	xxx	xxx		
Increase/Decrease in working capital	xxx	xxx		
B/F	xxx	xxx	xxx	xxx

### Procedure for preparation

1. The figures of current assets and current liabilities of two balance sheets given are recorded in the respective columns provided. Don't take the adjustments. Then find working capital and increase/decrease in working capital.
2. By observing the current assets and current liabilities, the differences are shown in the working capital columns against to the each account and balance those columns. Increase or decrease in working capital can be recognized as follows:



### II. Statement of funds from operations

#### FORMAT OF FUNDS FROM OPERATIONS

Particulars	Rs	Rs
Net profit		xxx
<b>Add:</b>		
Provision for depreciation	xxx	
Amortization of goodwill, patents, etc.	xxx	
Preliminary expenses	xxx	
Loss on sale of investments	xxx	
Loss on sale of fixed assets	xxx	
Provision for tax	xxx	
Discount on issues of debentures	xxx	xxx
<b>Less:</b>		
Dividend from investments	xxx	
Profit on sale of investments	xxx	
Profit on sale of fixed assets	xxx	
Interest received	xxx	xxx
<b>Funds from operations</b>		xxx

### Procedure for preparation

1. Prepare the accounts for the items given in the adjustments to know the hidden information.  
Generally, the hidden information is as follows:

## BEFA UNIT V

- a) Purchase price of a fixed asset
  - b) Sale value of a fixed asset
  - c) Profit/loss on sale of a fixed asset
  - d) Depreciation provided on a fixed asset
  - e) Depreciation of the asset sold
  - f) Provision for tax for the year
  - g) Tax paid during the year
  - h) Dividend proposed during the year
  - i) Dividend paid during the year
- 2) By observing balance sheets and accounts for adjustments, non-Operating expenses and non-cash payment items (debit items of profit and loss account ) are to be added to given net profit and all non-operating incomes & non-cash received items (credit items of profit and loss A/C) are to be deducted from given net profit to find the funds from operations.

Dr	<b>Fixed Asset A/C</b>		Cr
Particulars	Amount	Particulars	amount
To Balance b/d (opening)	***	By Depreciation ( for asset sold)	***
To P/L A/C (profit)	***	By Bank ( sale value)	***
To Bank (purchase)	***	By P/L A/C (loss)	***
	***	By Balance c/d	***
	***		***

Dr	<b>Cumulative Depreciation A/C</b>		Cr
Particulars	Amount	Particulars	amount
To Fixed Asset A/C (Depreciation of Asset sold)	***	By Balance b/d (opening)	***
To Balance c/d (closing)	***	By P/L A/C (provided)	***

Dr	<b>Provision for Tax A/C</b>		Cr
Particulars	Amount	Particulars	amount
To Bank A/C (paid)	***	By Balance b/d (opening)	***
To Balance c/d (closing)	***	By P/L A/C (provided)	***
	***		***

**Note:-** When tax paid is not given, it is considered that the tax provided in the previous year is paid in the current year.

## BEFA UNIT V

Dr	Proposed Dividend A/C	Cr	
Particulars	Amount	Particulars	amount
To Bank A/C (paid)	***	By Balance b/d	***
To Balance c/d (closing)	***	(opening)	***
	***	By P/L A/C (provided)	***

**Note:-** When dividend paid is not given, it is considered that the dividend proposed in the previous year is paid in the present year.

**Note:-** It can be found even if any one of the items is not given in the above said accounts.

2. In case provision for tax and proposed dividend are taken as current liabilities, there is no need to prepare those accounts. These should be shown in the “ statement of changes in working capital” only.

If these both are taken as an appropriation of profit (unlike current liabilities), there is a need to prepare their accounts to know the hidden information. Provision for tax and proposed dividend are to be added to the net profit to know the funds from operations and tax paid & dividend paid are shown on the applications’ side in the funds flow statement.

### III. Funds Flow Statement

#### FORMAT OF FUNDS FLOW STATEMENT

Particulars	Amount
<b>SOURCES OF FUND</b>	
Issue of shares	XXX
Issue of debentures	XXX
Sale of investments	XXX
Long-term loans	XXX
Non-operating incomes	XXX
Funds from operations	XXX
Decrease in working capital	XXX
<b>Total Sources</b>	XXX
<b>APPLICATION OF FUND</b>	
Redemption of pref. shares	XXX
Redemption of debentures	XXX
Purchase of investments	XXX
Purchase of fixed assets	XXX
Payment of long-term loans	XXX
Payment of tax	XXX
Payment of dividend	XXX
Increase in working capital	XXX
<b>Total Uses</b>	XXX

#### Procedure for preparation

1. By examining the non-current assets and liabilities, show as a source if cash comes and as an application if cash goes out.

## BEFA UNIT V

2. Show non-operating income as a source and non-operating expenses as an application.
3. Through adjustment items, if cash comes in show as a source and if cash goes out show as an application.
4. If goodwill shows increase, take on the applications' side.

**Note:-** In order to say in single sentence, except the items taken in the “ statements of changes in working capital and funds from operations”, take as a source when cash comes through all other items and take as an application when cash goes out through all other items.

### PRACTICE PROBLEMS

#### 1. Prepare:

1. Statement of changes in working capital and
2. Funds flow statement from following balance sheets of Vijaya Mitra Ltd., as on 31-03-2016 and 31-03-2017:

Liabilities	31-03-2016	31-03-2017
Equity capital	200000	300000
Preference capital	200000	100000
Profit and loss account	50000	75000
General resource	40000	60000
Unsecured loans	10000	50000
Current liabilities	40000	5000
Total	540000	590000
Assets	31-03-2016	31-03-2017
Land and buildings	100000	80000
Plant and Machinery	90000	120000
Cash at Bank	60000	40000
Stock	120000	140000
Sundry Debtors	30000	50000
Vehicles	140000	160000
Total	540000	590000

#### Adjustments:

1. Dividend declared and paid Rs. 25000
2. Additional plant purchased Rs. 5000
3. Tax paid during the year Rs. 45000

## BEFA UNIT V

**Solution:**

### STATEMENT OF CHANGES IN WORKING CAPITAL

Particulars	Previous year	Current year	Working capital	
			Increase	Decrease
<b>A. Current Assets</b>				
Cash at bank	60000	40000		20000
Stock	120000	140000	20000	
Debtors	30000	50000	20000	
<b>B. Current Liabilities</b>	210000	230000		
	40000	5000	35000	
	40000	5000		
<b>Working capital (A – B)</b>	170000	225000		
Increase in working capital B/F	55000	-		55000
	225000	225000	75000	20000

### FUNDS FROM OPERATIONS

Particulars	Amount	Amount
Net profit (75000-50000)		25000
<b>Add:</b>		
General reserve	20000	
Provision for dividend	25000	
Provision for tax	45000	
Depreciation on plant	20000	110000
<b>Funds from operations</b>		135000

### FUNDS FLOW STATEMENT

Particulars	Amount
<b>SOURCES OF FUND</b>	
Issue of equity capital	100000
Unsecured loans procured	40000
Sale of land and building	20000
Funds from operations	135000
<b>Total Sources</b>	295000
<b>APPLICATION OF FUND</b>	
Redemption of pref. capital	100000
Purchase of vehicles	20000
Purchase of plant	50000
Dividend paid	25000
Tax paid	45000
Increase in working capital	55000
<b>Total Uses</b>	295000

## BEFA UNIT V

**Working notes:**

### Plant and Machinery A/C

Particulars	Amount	Particulars	Amount
To Opening balance	90000	By P&L A/C (Depn.) b/f By Closing balance	20000
To Bank (purchase)	50000		120000
	140000		140000

### Dividend A/C

Particulars	Amount	Particulars	Amount
To Bank A/C	25000	By P&L A/C (provi.) b/f	25000
	25000		25000

### Tax A/C

Particulars	Amount	Particulars	Amount
To Bank A/C	45000	By P&L A/C (provi.) b/f	45000
	45000		45000

2. Prepare a funds flow statement from the following balance sheets

Liabilities	31-3-16	31-3-17	Assets	31-3-16	31-3-17
E.S.C	100000	200000	Machinery	120000	160000
P.S.C	170000	180000	Furniture	240000	140000
P & L A/C	260000	350000	Goodwill	12000	4000
G.R	110000	230000	Patents	8000	1000
9% Debentures	60000	140000	Cash	415000	1023000
Creditors	80000	200000	Preliminary exp.	5000	2000
Bills payable	20000	30000			
	800000	1330000		800000	1330000

1. Depreciation on Machinery Rs. 15000 and on Furniture Rs. 12000

2. Dividend paid Rs. 18000

## BEFA UNIT V

**Solution:**

### STATEMENT OF CHANGES IN WORKING CAPITAL

Particulars	Previous year	Current year	Working capital	
			Increase	Decrease
<b>A. Current Assets</b>				
Cash	415000	1023000	608000	
<b>B. Current Liabilities</b>	A 415000	1023000		
Creditors	80000	200000		120000
Bills payables	20000	30000		10000
<b>Working capital (A – B)</b>	B 100000	230000		
Increase in working capital B/F	315000	793000		478000
	478000	-		
	793000	793000	608000	608000

### FUNDS FROM OPERATIONS

Particulars	Amount	Amount
Net profit (350000-260000)		90000
<b>Add:</b>		
General reserve	120000	
Provision for dividend	18000	
Depreciation on furniture	12000	
Depreciation on machinery	15000	
Goodwill written off	8000	
Patents written off	7000	
Preliminary expenses written off	3000	183000
<b>Funds from operations</b>		273000

### FUNDS FLOW STATEMENT

Particulars	Amount
<b>SOURCES OF FUND</b>	
Issue of equity capital	100000
Issue of preference capital	10000
Issue of debentures	80000
Sale of furniture	88000
Funds from operations	273000
<b>Total Sources</b>	551000
<b>APPLICATION OF FUND</b>	
Purchase of machinery	55000
Dividend paid	18000
Increase in working capital	478000
<b>Total Uses</b>	551000

## BEFA UNIT V

### Working Notes:

#### Machinery A/C

Particulars	Amount	Particulars	Amount
To Opening balance	120000	By P&L A/C (Depn.)	15000
To Bank (purchase) b/f	55000	By Closing balance	160000
	175000		175000

#### Furniture A/C

Particulars	Amount	Particulars	Amount
To Opening balance	240000	By P&L A/C (Depn.)	12000
		By Bank (Sale) b/f	88000
		By Closing balance	140000
	240000		240000

#### Dividend A/C

Particulars	Amount	Particulars	Amount
To Bank A/C	18000	By P&L A/C (provi.) b/f	18000
	18000		18000

3. Balance sheets of M/s. Divya as on 1<sup>st</sup> January 2016 and 1<sup>st</sup> January 2017 were as follows:

Liabilities	2016	2017	Assets	2016	2017
Creditors	40000	44000	Cash	12000	27000
Overdraft	2000	3000	Debtors	30000	50000
Long term loan	40000	50000	Stock	35000	25000
Capital	125000	150000	Machinery	80000	55000
Reserves	10000	10000	Land	40000	50000
P& L	15000	30000	building	35000	80000
	232000	287000		232000	287000

During the year machine costing Rs. 10000 (accumulated depreciation Rs. 3000) was sold for Rs. 5000.

## BEFA UNIT V

**Solution:**

### STATEMENT OF CHANGES IN WORKING CAPITAL

Particulars	Previous year	Current year	Working capital	
			Increase	Decrease
<b>A. Current Assets</b>	A			
Cash		12000	27000	15000
Debtors		30000	50000	20000
Stock		35000	25000	10000
	A	77000	102000	
<b>B. Current Liabilities</b>	B			
Creditors		40000	44000	4000
Overdraft		2000	3000	1000
		42000	47000	
<b>Working capital (A – B)</b>		35000	55000	
Increase in working capital B/F		20000		20000
		55000	55000	35000
			35000	35000

### FUNDS FROM OPERATIONS

Particulars	Rs	Rs
Net profit (30000-15000)		15000
<b>Add:</b>		
General reserve		
Provision for dividend		
Depreciation on furniture		
Depreciation on machinery	18000	
Loss on sale of machinery	2000	20000
<b>Funds from operations</b>		35000

### FUNDS FLOW STATEMENT

Particulars	Amount
<b>SOURCES OF FUND</b>	
Issue of capital	25000
Long-term loan	10000
Sale of machinery	5000
Funds from operations	35000
<b>Total Sources</b>	75000
<b>APPLICATION OF FUND</b>	
Purchase of land	10000
Purchase of building	45000
Increase in working capital	20000
<b>Total Uses</b>	75000

## BEFA UNIT V

### Working Notes:

#### Machinery A/C

Particulars	Amount	Particulars	Amount
To Opening balance	80000	By P&L A/C (Depn.)	3000
		By P&L A/C (loss on sale)	2000
		By Bank (sale)	5000
		By Closing balance	55000
		By P&L A/C (Depn.) b/f	15000
	80000		80000

4. Prepare a funds flow statement from the following:

Liabilities	2002	2003	Assets	2002	2003
Share capital	200000	250000	Cash	30000	47000
Creditors	70000	45000	Debtors	120000	115000
Retained earnings	10000	23000	Stock	80000	90000
	280000	318000	Land	50000	66000
				280000	318000

### Solution:

#### STATEMENT OF CHANGES IN WORKING CAPITAL

Particulars	Previous year	Current year	Working capital	
			Increase	Decrease
<b>A. Current Assets</b>				
Cash	30000	47000	17000	
Debtors	120000	115000		5000
Stock	80000	90000	10000	
	230000	252000		
<b>B. Current Liabilities</b>				
Creditors	70000	45000	25000	
	70000	45000		
<b>Working capital (A – B)</b>	160000	207000		
Increase in working capital B/F	47000	-		47000
	207000	207000	52000	52000

#### FUNDS FROM OPERATIONS

Particulars	Rs	Rs
Net profit (23000-10000)		13000
<b>Funds from operations</b>		13000

## BEFA UNIT V

### FUNDS FLOW STATEMENT

Particulars	Amount
<b>SOURCES OF FUND</b>	
Issue of capital	50000
Funds from operations	13000
<b>Total Sources</b>	<b>63000</b>
<b>APPLICATION OF FUND</b>	
Purchase of land	16000
Increase in working capital	47000
<b>Total Uses</b>	<b>63000</b>

5. From the information given below, prepare funds flow statement of Global Co. Ltd.

Liabilities	I year	II year	Assets	I year	II year
Share capital			Goodwill	190000	140000
Equity capital	450000	600000	Plant	160000	250000
Preference capital	225000	150000	Building	240000	195000
Profit and loss A/C	60000	75000	Inventories	92000	235000
Proposed dividend	55000	67000	trade	175000	125000
Trade creditors	72000	90000	Debtors	45000	57000
Bills payable	32000	25000	Bills receivables	52000	77000
Provision for tax	60000	72000	cash		
	954000	1079000		954000	1079000

Additional information:

- An interim dividend of Rs. 35000 has been paid in II year.
- Payment of income tax Rs. 52000 was paid during II year.
- Depreciation of Rs. 35000 and Rs. 42000 have been charged on plant and building respectively in II year.
- A part of the plant worth Rs. 20000 was sold for Rs. 30000.

**Solution:**

### STATEMENT OF CHANGES IN WORKING CAPITAL

Particulars	Previous year	Current year	Working capital	
			Increase	Decrease
<b>A. Current Assets</b>				
Cash	52000	77000	25000	
Inventories	92000	235000	143000	
Debtors	175000	125000		50000
Bills receivables	45000	57000	12000	
	364000	494000		
<b>B. Current Liabilities</b>				
Creditors	72000	90000		18000
Bills payables	32000	25000		
	104000	115000		
<b>Working capital (A – B)</b>				
	260000	379000		
Increase in working capital B/F	119000			119000
	379000	379000	187000	187000

## BEFA UNIT V

### FUNDS FROM OPERATIONS

Particulars	Rs	Rs
Net profit (75000-60000)		15000
<b>Add:</b>		
Goodwill written off	50000	
Provision for dividend	47000	
Provision for tax	64000	
Depreciation on plant	35000	
Depreciation on building	42000	238000
<b>Less:</b>		253000
Profit on sale of plant	10000	10000
<b>Funds from operations</b>		243000

### FUNDS FLOW STATEMENT

Particulars	Amount
<b>SOURCES OF FUND</b>	
Issue of equity capital	150000
Sale of building	3000
Sale of plant	30000
Funds from operations	243000
<b>Total Sources</b>	426000
<b>APPLICATION OF FUND</b>	
Redemption of preference shares	75000
Purchase of plant	145000
Dividend paid	35000
Tax paid	52000
Increase in working capital	119000
<b>Total Uses</b>	426000

#### Working Notes:

##### Plant A/C

Particulars	Amount	Particulars	Amount
To Opening balance	160000	By P&L A/C (Depn.)	35000
To P & L A/C (profit)	10000	By Bank (Sale)	30000
To Bank (purchase)	145000	By Closing balance	250000
b/f	315000		315000

##### Building A/C

Particulars	Amount	Particulars	Amount
To Opening balance	240000	By P&L A/C (Depn.)	42000
		By Bank (Sale) b/f	3000
		By Closing balance	195000
	240000		240000

## BEFA UNIT V

### Proposed dividend A/C

Particulars	Amount	Particulars	Amount
To Bank A/C	35000	By Opening balance	55000
To Closing balance	67000	By P&L A/C (provi.) b/f	47000
	102000		102000

### Provision for tax A/C

Particulars	Amount	Particulars	Amount
To Bank A/C	52000	By Opening balance	60000
To Closing balance	72000	By P&L A/C (provi.) b/f	64000
	124000		124000

### **ADVANTAGES OF FUND FLOW STATEMENTS**

1. Funds flow statement reveals the net result of Business operations done by the company during the year.
2. In addition to the balance sheet, it serves as an additional reference for many interested parties like analysts, creditors, suppliers, government to look into financial position of the company.
3. The Fund Flow Statement shows how the funds were raised from various sources and also how those funds were deployed by a company.
4. It reveals the causes for the changes in liabilities and assets between the two balance sheet dates.
5. Funds flow statement helps the management in deciding its future course of plans and also it acts as a control tool for the management.

### **Disadvantages of Fund Flow Statements**

1. Funds Flow statement has to be used along with balance sheet and profit and loss account for inference of financial strengths and weakness of a company it cannot be used alone.
2. Fund Flow Statement does not reveal the cash position of the company, and that is why company has to prepare cash flow statement in addition to funds flow statement.
3. Funds flow statement only rearranges the data which is there in the books of account and therefore it lacks originality.
4. Funds flow statement is basically historic in nature, that is it indicates what happened in the past and it does not communicate anything about the future, only estimates can be made based on the past data and therefore it cannot be used the management for taking decision related to future.

## **BEFA UNIT V** **CASH FLOW ANALYSIS**

### **INTRODUCTION**

A **Cash Flow Statement** is a statement showing changes in cash position of the firm from one period to another. It explains the inflows (receipts) and outflows (disbursements) of cash over a period of time. The inflows of cash may occur from sale of goods, sale of assets, receipts from debtors, interest, dividend, rent, issue of new shares and debentures, raising of loans, short-term borrowing, etc. The cash outflows may occur on account of purchase of goods, purchase of assets, payment of loans loss on operations, payment of tax and dividend, etc

The cash flow statement shows how much cash comes in and goes out of the company over the quarter or the year. At first glance, that sounds a lot like the income statement in that it records financial performance over a specified period. But there is a big difference between the two.

What distinguishes the two is accrual accounting, which is found on the income statement. Accrual accounting requires companies to record revenues and expenses when transactions occur, not when cash is exchanged. At the same time, the income statement, on the other hand, often includes non-cash revenues or expenses, which the statement of cash flows does not include.

Just because the income statement shows net income of Rs.10 does not mean that cash on the balance sheet will increase by Rs.10. Whereas when the bottom of the cash flow statement reads Rs.10 net cash inflow, that's exactly what it means. The company has Rs.10 more in cash than at the end of the last financial period. You may want to think of net cash from operations as the company's "true" cash profit.

Because it shows how much actual cash a company has generated, the statement of cash flows is critical to understanding a company's fundamentals. It shows how the company is able to pay for its operations and future growth.

Indeed, one of the most important features you should look for in a potential investment is the company's ability to produce cash. Just because a company shows a profit on the income statement doesn't mean it cannot get into trouble later because of insufficient cash flows. A close examination of the cash flow statement can give investors a better sense of how the company will fare.

### **OBJECTIVES OF CASH FLOW STATEMENT**

1. Highlighting cash flow from different activities
2. Short-term Planning
3. Cash Flow information helps to understand liquidity
4. Efficient cash management
5. Prediction of sickness
6. Comparison with budget
7. Cash position

### **CURRENT ASSETS AND CURRENT LIABILITIES**

#### **CURRENT ASSETS**

1. Cash in hand
2. Cash at bank
3. Bills receivables
4. Debtors

#### **CURRENT LIABILITIES**

1. Bills payables
2. Creditors
3. Outstanding expenses
4. Dividends to be paid

## BEFA UNIT V

- |                           |  |
|---------------------------|--|
| 5. Short term advances    | 5. Bank over draft                         |
| 6. Short term investments | 6. Short term loans                        |
| 7. Inventories or stock   | 7. Provisions for current assets (ex: RBD) |
| 8. Pre- paid expenses     | 8. Taxes to be paid                        |
| 9. Incomes to be received | 9. Provision for tax                       |
| 10. Loose tools, etc.     | 10. Proposed dividend                      |

**The general rules that develop from the above discussion are:**

- 1. An increase in current assets leads to decrease in cash.**
- 2. A decrease in current assets leads to an increase in cash.**
- 3. An increase in current liabilities leads to an increase in cash.**
- 4. A decrease in current liabilities leads to a decrease in cash.**

### **PREPARING A CASH FLOW STATEMENT**

Cash flow statements have three distinct sections, each of which relates to a particular component – operations, investing and financing – of a company's business activities.

The indirect method of presentation is very popular, because the information required for it is relatively easily assembled from the accounts that a business normally maintains in its chart of accounts. The indirect method is less favoured by the standard-setting bodies, since it does not give a clear view of how cash flows through a business. The alternative reporting method is the direct method.

#### **Three Sections of the Cash Flow Statement**

Companies produce and consume cash in different ways, so the cash flow statement is divided into three sections: cash flows from operations, financing and investing. Basically, the sections on operations and financing show how the company gets its cash, while the investing section shows how the company spends its cash.

- 1. Operating Activities:** Operating activities include cash flows from all standard business operations. Cash receipts from selling goods and services represent the inflows. The revenues from interest and dividends are also included here. The operational expenditures are considered as outflows for this section. Although interest expenses fall under this section but the dividends are not included. Dividends are considered as a part of financing activity in financial accounting terms.
- 2. Investing Activities:** Investing activities include transactions with assets, marketable securities and credit instruments. The sale of property, plant and equipment or marketable securities is a cash inflow. Purchasing property, plant and equipment or marketable securities are considered as cash outflows. Loans made to borrowers for long-term use is another cash outflow. Collections from these loans, however, are cash inflows.
- 3. Financing Activities:** Financing activities on the statement of cash flows are much more defined in nature. The receipts come from borrowing money or issuing stock. The outflows occur when a company repays loans, purchases treasury stock or pays dividends to stockholders. As the case with

## BEFA UNIT V

other activities on the statement of cash flows depend on activities rather than actual general ledger accounts.

### CASH FLOW STATEMENT FORMAT

#### Cash Flow Statement of ----- Company for the year ended -----

Particulars	Rs.	Rs.
<b>A. Cash Flow from Operating Activities</b>		
Net Profit	xxx	
<b>Adjustments:</b> (to convert net profit to cash provided by operating activities)		
Goodwill written off	xxx	
Loss on sale of investments	xxx	
Loss on sale of fixed assets	xxx	
Preliminary expenses written off	xxx	
Discount on issue of debentures	xxx	
Provision for tax	xxx	
Patents written off	xxx	
Transfer to reserve	xxx	
Provision for dividend	xxx	
Profit on sale of fixed assets/investments	(xxx)	
Profit from investments	(xxx)	
Increase in current liabilities	xxx	
Decrease in current liabilities	(xxx)	
Increase in current assets	(xxx)	
Decrease in current assets	xxx	
<b>Cash from operations</b>		xxx
<b>B. Cash Flows from Investing Activities</b>		
Purchase of fixed assets	(xxx)	
Proceeds from sale of fixed assets	xxx	
Purchase of long-term investments	(xxx)	
Proceeds from sale of long-term investments	xxx	
<b>Cash from investing activities</b>		xxx
<b>C. Cash Flows from Financing Activities</b>		
Issue of shares	xxx	
Issue of debentures	xxx	
Share capital repaid	(xxx)	
Debentures repaid	(xxx)	
<b>Cash from financing activities</b>		xxx
<b>Net increase/decrease in cash</b>		xxx
Cash at the beginning of the year		xxx
Cash at the end of the year		xxx

## **BEFA UNIT V**

### **Steps to know cash flow from Operating Activities**

- 1) Prepare accounts for adjustments to find hidden information.
- 2) Show current year net profit (Closing balance – Opening balance)
- 3) Add Non – cash and Non – operating expenses by observing balance sheets and accounts for adjustments.
- 4) Deduct Non – cash and Non – operating incomes by observing balance sheets and accounts for adjustments.
- 5) Adjust current assets & current liabilities except cash and bank balances.

### **Steps to know cash flow from Investing Activities**

- 1) Observe all fixed assets and their adjustment accounts.
- 2) Purchase of fixed assets and investments result in outflow of cash.
- 3) Sale of fixed assets and investments result in inflow of cash.

### **Steps to know cash flow from Financing Activities**

- 1) Observe all capital & long-term liabilities and their adjustment accounts.
- 2) Increase in capital and long-term loans result in inflow of cash.
- 3) Decrease in capital and long-term loans result in outflow of cash.

## **ADVANTAGES OF CASH FLOW STATEMENT**

1. It shows the actual cash position available with the company between the two balance sheet dates which funds flow and profit and loss account are unable to show. So it is important to make a cash flow report if one wants to know about the liquidity position of the company.
2. It helps the company in accurately projecting the future liquidity position of the company enabling it arrange for any shortfall in money by arranging finance in advance and if there is excess than it can help the company in earning extra return by deploying excess funds.
3. It acts like a filter and is used by many analyst and investors to judge whether company has prepared the financial statements properly or not because if there is any discrepancy in the cash position as shown by balance sheet and the cash flow statement, it means that statements are incorrect.

## **DISADVANTAGES OF CASH FLOW STATEMENT**

1. Since it shows only cash position, it is not possible to deduce actual profit and loss of the company by just looking at this statement.
2. In isolation this is of no use and it requires other financial statements like balance sheet, profit and loss etc..., and therefore limiting its use.

## BEFA UNIT V

### PRACTICE PROBLEMS AND SOLUTIONS

1. From the following balance sheets as on 31-12-2016 and 31-12-2017. You are required to prepare a cash flow statement.

Liabilities	31-12-2016	31-12-2017
Share capital	100000	150000
Profit and loss A/C	50000	80000
General reserve	30000	40000
12% Bonds	50000	60000
Sundry creditors	30000	40000
Outstanding expenses	10000	15000
Total	270000	385000
Assets	31-12-2016	31-12-2017
Fixed assets	100000	150000
Goodwill	50000	40000
Inventories	50000	80000
Bank	10000	15000
Bills receivables	10000	20000
Sundry debtors	50000	80000
Total	270000	385000

**Solution:**

**Cash Flow Statement for the year ended 31-12-2017**

Particulars	Rs.	Rs.
<b>A. Cash Flow from Operating Activities</b>		
Net Profit (80,000 - 50,000)	30000	
<b>Adjustments:</b>		
Goodwill written off	10000	
Transfer to reserve	10000	
Increase in creditors	10000	
Increase in outstanding expenses	5000	
Increase in inventory	(30,000)	
Increase in receivables	(10,000)	
Increase in debtors	(30,000)	
<b>Cash from operations</b>		(5,000)
<b>B. Cash Flows from Investing Activities</b>		
Purchase of fixed assets	(50,000)	
<b>Cash from investing activities</b>		(50,000)
<b>C. Cash Flows from Financing Activities</b>		
Issue of shares	50,000	
Issue of bonds	10,000	
<b>Cash from financing activities</b>		60,000
<b>Net increase in cash</b>		5,000
Bank at the beginning of the year		10,000
Bank at the end of the year		15,000

## BEFA UNIT V

2. Prepare a cash flow statement from the following balance sheets of Kumar Ltd.

<b>Liabilities</b>	<b>2016</b>	<b>2017</b>	<b>Assets</b>	<b>2016</b>	<b>2017</b>
Capital	150000	175000	Land & Building	110000	150000
Loan from bank	160000	100000	Machinery	200000	140000
Creditors	85000	93000	Stock	50000	45000
Outstanding expenses	5000	7000	Debtors	70000	80000
Bills payable	50000	40000	Cash	15000	22000
Long term loan	-----	25000	Pre – paid expenses	5000	3000
	450000	440000		450000	440000

Net profit during the year 2017 was Rs/ 60000. During 2017 machinery costing Rs. 25000 ( accumulated depreciation Rs. 10000) was sold for Rs. 25000. The tax payable and dividend payable were Rs. 50000 and Rs. 35000 respectively during 2017.

**Solution:**

**Cash Flow Statement for the year ended 31-12-2017**

<b>Particulars</b>	<b>Rs.</b>	<b>Rs.</b>
<b>A. Cash Flow from Operating Activities</b>		
Net Profit	60000	
<b>Adjustments:</b>		
Depreciation on machinery	45000	
Profit on sale of machinery	(10000)	
Provision for tax	50000	
Provision for dividend	35000	
Increase in creditors	8000	
Increase in outstanding expenses	2000	
Decrease in bills payable	(10000)	
Decrease in stock	5000	
Increase in debtors	(10000)	
Decrease in prepaid expenses	2000	
<b>Cash from operations</b>		177000
<b>B. Cash Flows from Investing Activities</b>		
Purchase of land and building	(40000)	
Sale of machinery	25000	
<b>Cash from investing activities</b>		(15000)
<b>C. Cash Flows from Financing Activities</b>		
Bank loan repaid	(60000)	
Long-term loan repaid	25000	
Tax paid	(50000)	
Dividend paid	(35000)	
Drawings	(35000)	
<b>Cash from financing activities</b>		(155000)
<b>Net increase/decrease in cash</b>		7000
Cash at the beginning of the year		15000
Cash at the end of the year		22000

## BEFA UNIT V

### **Working notes:**

**Note:** For working notes given in the problem, accounts are to be prepared to extract the hidden information.

#### **Machinery Account**

<b>Particulars</b>	<b>Amount</b>	<b>Particulars</b>	<b>Amount</b>
To Opening balance	200000	By Bank (Sales)	25000
To P & L A/C (Profit)	10000	By Depreciation B/F	45000
	210000	By Closing balance	140000
			210000

#### **Tax Account**

<b>Particulars</b>	<b>Amount</b>	<b>Particulars</b>	<b>Amount</b>
To Bank Account	50000	By P & L A/C (provided) B/F	50000
	50000		50000

#### **Dividend Account**

<b>Particulars</b>	<b>Amount</b>	<b>Particulars</b>	<b>Amount</b>
To Bank Account	35000	By P & L A/C (provided) B/F	35000
	35000		35000

3. From the following balance sheets of 1993 and 1994, prepare the cash flow statement.

<b>Liabilities</b>	<b>2016</b>	<b>2017</b>	<b>Assets</b>	<b>2016</b>	<b>2017</b>
Equity capital	20000	25000	Plant	46000	45000
Debentures	15000	12000	Debtors	9000	7000
Creditors	16000	18000	Stock	5000	9000
Profit and loss A/C	11000	14000	Cash	2000	8000
	62000	69000		62000	69000

#### **Solution:**

#### **Cash Flow Statement for the year ended 31-12-2017**

<b>Particulars</b>	<b>Rs.</b>	<b>Rs.</b>
<b>A. Cash Flow from Operating Activities</b>		
Net Profit (14000-11000)	3000	
<b>Adjustments:</b>		
Increase in creditors	2000	
Decrease in debtors	2000	
Increase in stock	(4000)	
<b>Cash from operations</b>	3000	
<b>B. Cash Flows from Investing Activities</b>		
Sale of plant	1000	
<b>Cash from investing activities</b>	1000	
<b>C. Cash Flows from Financing Activities</b>		
Issue of equity capital	5000	
Debentures repaid	(3000)	

## BEFA UNIT V

<b>Cash from financing activities</b>		2000
<b>Net increase/decrease in cash</b>		6000
Cash at the beginning of the year		2000
Cash at the end of the year		8000

4. Prepare a cash flow statement from the following balance sheets as on 31-12-2016 and 31-12-2017.

<b>Liabilities</b>	<b>2016</b>	<b>2017</b>	<b>Assets</b>	<b>2016</b>	<b>2017</b>
Share capital	100000	150000	Fixed assets	100000	150000
Profit and loss A/C	50000	80000	Goodwill	50000	40000
General reserve	30000	40000	Inventories	50000	80000
6% bonds	50000	60000	Debtors	50000	80000
Creditors	30000	40000	Bills receivables	10000	20000
Outstanding expenses	10000	15000	Bank	10000	15000
	270000	385000		270000	385000

**Solution:**

**Cash Flow Statement for the year ended 31-12-2017**

<b>Particulars</b>	<b>Rs.</b>	<b>Rs.</b>
<b>A. Cash Flow from Operating Activities</b>		
Net Profit (80000-50000)	30000	
<b>Adjustments:</b>		
General Reserve	10000	
Goodwill written off	10000	
Interest on bonds (50000x6/100)	3000	
Increase in creditors	10000	
Increase in outstanding expenses	5000	
Increase in inventory	(30000)	
Increase in debtors	(30000)	
Increase in bills receivables	(10000)	
<b>Cash from operations</b>		(2000)
<b>B. Cash Flows from Investing Activities</b>		
Purchase of fixed assets	(50000)	
<b>Cash from investing activities</b>		(50000)
<b>C. Cash Flows from Financing Activities</b>		
Issue of equity capital	50000	
Issue of bonds	10000	
Interest on bonds paid	(3000)	
<b>Cash from financing activities</b>		57000
<b>Net decrease in cash</b>		5000
Bank at the beginning of the year		10000
Bank at the end of the year		15000

## BEFA UNIT V

5. Financial statements of Mr. Ram are as follows

<b>Liabilities</b>	<b>2016</b>	<b>2017</b>	<b>Assets</b>	<b>2016</b>	<b>2017</b>
Bills payable	29000	25000	Cash	40000	30000
Capital	731000	615000	Debtors	20000	17000
			Stock	8000	13000
			Buildings	92000	80000
			machinery	600000	500000
	760000	640000		760000	640000

Additional information:

- a) Proprietor has not taken any drawings.
  - b) There are no purchases and sales in buildings and machinery.
- Prepare cash flow statement.

### Cash Flow Statement for the year ended 31-12-2017

<b>Particulars</b>	<b>Rs.</b>	<b>Rs.</b>
<b>A. Cash Flow from Operating Activities</b>		
Net Profit	(116000)	
<b>Adjustments:</b>		
Depreciation on buildings	12000	
Depreciation on machinery	100000	
Decrease in bills payable	(4000)	
Decrease in debtors	3000	
Increase in stock	(5000)	
<b>Cash from operations</b>		(10000)
<b>B. Cash Flows from Investing Activities</b>		
	0	
<b>Cash from investing activities</b>		0
<b>C. Cash Flows from Financing Activities</b>		
	0	
<b>Cash from financing activities</b>		0
<b>Net decrease in cash</b>		(10000)
Cash at the beginning of the year		40000
Cash at the end of the year		30000

### Working Notes:

#### Capital Account

<b>Particulars</b>	<b>Amount</b>	<b>Particulars</b>	<b>Amount</b>
To P & L A/C (loss)		By Opening balance	
B/F	116000		731000
To Closing balance	615000		
	731000		731000

## BEFA UNIT V

### DIFFERENCES BETWEEN FUNDS FLOW STATEMENT AND CASH FLOW STATEMENT

**Table of Difference between Funds Flow Statement and Cash Flow Statement**

	<b>Basis of Difference</b>	<b>Cash Flow Statement</b>	<b>Funds Flow Statement</b>
1.	<b>Meaning of fund</b>	Funds means only cash which is a component of net current assets.	Fund means net working capital (i.e. current assets minus current liabilities).
2.	<b>Objective</b>	Its objective is to know about the changes occurred in cash position between two balance sheet dates.	Its objective is to know about the changes occurred in net working capital between two balance dates.
3.	<b>Basis of preparation</b>	Increase in current liability or decrease in current asset (except cash) results in an increase in cash.	Increase in current liability and decrease in current asset results in a decrease in net working
4.	<b>Effect of transaction</b>	Effect of a transaction on cash is considered.	Effect of a transaction on net working capital is considered.
5.	<b>Utility</b>	Cash flow statement is useful for short-term analysis.	Fund flow statement is useful for long-term analysis
6.	<b>Statement of changes in Working Capital</b>	No such statement is prepared separately in cash flow statement.	A separate statement for changes in working capital is prepared in fund flow statement or analysis.
7	<b>Cash Balances</b>	Opening and closing balances of cash are shown in this statement	Such balances of cash are shown in statement of changes in working capital.