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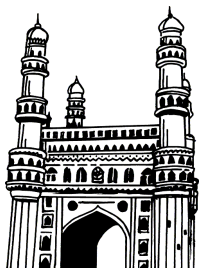

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UNIT I

Business Economics Nature and Scope : Introduction to business economics, characteristics, nature and scope concept of opportunities cost, Incermental cost, Time perspective, Discounting and Equi-marginal Principle

1.1 INTRODUCTION TO BUSINESS ECONOMICS

Q1. Define business economics?

Ans : **(June-19, Dec.-18, Dec.-17, Imp.)**

Business Economics, also called Managerial Economics, is the application of economic theory and methodology to business. Business involves decision-making; and business economics serves as a bridge between economic theory and decision-making in the context of business. Economic theories, economic principles, economic laws, economic equations, and economic concepts are used for decision making. On this ground students of commerce should know the importance of basic theories in actual business application.

Business economics is the study of the financial issues and challenges faced by corporations operating in a specified marketplace or economy. Business economics deals with issues such as business organization, management, expansion and strategy.

Business economics assists in the following,

(a) It helps in solving the business problems easily.

(b) It helps in improving the quality and accuracy of decisions.

(c) It facilitates in taking the right decision.

Thus, business economics deals with analyzing allocation of the resources available to a firm or other management among the activities of that unit.

The outcomes of positive analysis does not change with the changes in the norms. Positive statements are conditional in nature.

Meaning

Business economics is that part of economics which are related to economic activities and sole aim to growth in business. Every business is operated by some resources and these are limited. Business economics tells the techniques about how to utilize resources for maximum satisfaction.

Definitions

(i) According to MeNair and Meriam, " Managerial economics consists of the use of economic modes of thought to analysis business situations."

(ii) According to Joel Dean, "The purpose of managerial economics is to show how economic analysis can be used in formulating business policies."

(iii) According to Mansfield, "Managerial economics attempts to bridge the gap between the purely analytically problems that intrigue many economic theorists and the day-to-day decisions that the management must face."

(iv) According to Hague, "Managerial economics is concerned with using logic of economics, mathematics and statistics of providing effective ways thinking about business decision problem."

(v) According to Pappas, Brigham and Hirschey, "Managerial economics applies economic theory and methodology to business and administrative decision making."

Q2. What are the objectives of business economics.

Ans :

The various objectives of business economics are:

1. To integrate economic theory with business practice.
2. To apply economic concepts: and principles to solve business problems.
3. To employ the most modern instruments and tools to solve business problems.
4. To allocate the scarce resources in the optimal manner.
5. To make overall development of a firm.
6. To help achieve other objectives of a firm like attaining industry leadership, expansion of the market share etc.
7. To minimise risk and uncertainty
8. To help in demand and sales forecasting.
9. To help in operation of firm by helping in planning, organizing, controlling etc.
10. To help in formulating business policies.
11. To help in profit maximisation.

1.2 Characteristics of Business Economics

Q3. Explain the characteristics of business economics?

Ans :

The following characteristics of business economics will indicate its nature:

1. Business Economics is a Normative Science

Managerial economics is a normative science. It is concerned with what management should do under particular circumstances. It determines the goals of the enterprise. Then it develops the ways to achieve these goals.

2. Pragmatic

Managerial economics is pragmatic. It concentrates on making economic theory more application oriented. It tries to solve the managerial problems in their day-today functioning.

3. Prescriptive

Managerial economics is prescriptive rather than descriptive. It prescribes solutions to various business problems.

4. Uses Theory of Firm

Business economics largely uses the body of economic concepts and principles towards solving the business problems. Managerial economics is a special branch of economics to bridge the gap between economic theory and managerial practice.

5. Management Oriented

The main aim of business economics is to help the management in taking correct decisions and preparing plans and policies for future. Managerial economics analyses the problems and give solutions just as doctor tries to give relief to the patient.

7. Multi Disciplinary

Managerial economics make use of most modern tools of mathematics, statistics and operation research. In decision making and planning principles include accounting, finance, marketing, production and personnel etc.

8. Art and Science

Managerial economics is both a science and an art. As a science, it establishes relationship between cause and effect by collecting, classifying and analyzing the facts on the basis of certain principles. It points out to the objective and also shows the way to attain the said objectives.

Q4. Explain the importance and practical significance of managerial economics.

Ans : **(June-19)**

(i) Business Planning

Managerial economics assists business organizations in formulating plans and better

decision making. It helps in analyzing the demand and forecasting future business activities.

(ii) Cost Control

Controlling the cost is another important role played by managerial economics. It properly analyses and decides production activities and the cost associated with them. Managerial economics ensure that all resources are efficiently utilized which reduces the overall cost.

(iii) Price Determination

Setting the right price is one of the key decisions to be taken by every business organization. Managerial economics supplies all relevant data to managers for deciding the right prices for products.

(iv) Business Prediction

Managerial economics through the application of various economic tools and theories helps managers in predicting various future uncertainties. Timely detection of uncertainties helps in taking all possible steps to avoid them.

(v) Profit Planning And Control

Managerial economics enables in planning and managing the profit of the business. It makes an accurate estimate of all cost and revenue which helps in earning the desired profit.

(vi) Inventory Management

Proper management of inventory is a must for ensuring the continuity of business activities. It helps in analyzing the demand and accordingly, production activities are performed. Managers can arrange and ensure that the proper quantity of inventory is always available within the business organization.

Q5. "Business Economics is Micro in Nature". Explain.

Ans : **(Dec.-16)**

(i) Business economics includes various micro economic tools like economic analysis, profit management, etc.,

(ii) For fixing the price of a product, managers use various micro economic theories like pricing theory, cost and revenue theories, etc.,

(iii) Managers use cost and benefit analysis for making business decisions.

(iv) Theory of production is used in making decisions related to production and supply of a particular product.

(v) Business economics also used statistical methods for application of economic theory in making decision.

(vi) Capital budgeting and capital rationing techniques are used by managers in the preparation of budgets.

(vii) Business economics uses the theory of firm which is an important element in micro economics.

1.3 NATURE AND SCOPE BUSINESS ECONOMICS

Q6. Explain the nature of business economics.

Ans : **(Dec.-20, Dec.-18, May-18, Dec.- 17, Imp.)**

The nature of business economics can be summarized as follows:

1. Demand Forecasting

Demand forecasting is an important topic studied in Business Economics. Every business firm initiates and continues its production process on the basis of the anticipation of more demand for its goods in the future. It makes research and conducts market survey with a view to know the tastes and fashions of the consumers. It pools up the resources and starts production for meeting the future demand. Business economics analyses the demand behaviour and forecasts the quantity demanded by the consumers.

2. Cost Analysis

Business Economics deals with the analysis of different costs incurred by the business firms. Every firm desires to minimize its costs and increase its output by securing several economies of scale. But is does not know in advance about the exact costs involved in production process. Business Economics deals with the cost estimates and acquaints the entrepreneurs with the cost analysis of their firm.

3. Profit Analysis

Every business firm aims to secure maximum profits. But at the same time it faces uncertainty and risk in getting profits. It has to make innovations in production and marketing of its goods. Business Economics deals with the matters relating to profit analysis like profit techniques, policies and break-even analysis.

4. Capital Management

Capital management is another topic dealt in Business Economics. It denotes planning and control of capital expenditure in business organisation. It studies matters like cost of capital, rate of return, selection of best project etc.

5. Effective Utilization of Business Resources

Business economics study is very helpful for effective utilization of business resources. It determines every factors price on supply and demand of such factor so, that the price becomes optimize by this supply demand analysis.

6. Effective use of Economic Policies for Business Development

Business economics makes different economic policies under macro economics and these policies utilize for business and trade development. For instance, we can take monetary policies. In monetary policies, RBI has power to change CRR and other interest rate for development of business.

Q7. Explain the scope of business economics.

Ans : **(Dec.-20, Dec.-18, May-18, Dec.-17, Imp.)**

The scope of managerial economics include all the economic concepts, theories, ideas, principles, tools and techniques that can be used to analyze the business environment and find solutions to practical business problems. The following business areas can be considered as the scope of managerial economics.

1. Objectives of a Business Firm or Organization

Managerial economics provides a sound framework by facilitating a business firm to frame its objectives both in the short-run and long-run.

2. Resource Allocation

Managerial economics provide the methods of effective resource allocation. It mainly aims at achieving high output through low and proper allocation of resources.

3. Demand Analysis and Demand Forecasting

It suggests the methodologies for analyzing the demand of a product. The demand forecasting techniques it provides are proven to be quite efficient for meeting the competition.

4. Competitive Analysis

The techniques provided by managerial economics facilities a firm to withstand in a competitive situation.

5. Strategic Planning

Managerial economics guides a business manager in making strategic decisions.

6. Production Management

Managerial economics plays a vital role in production management. It's effective tools helps to plan the business schedule, regulate the production process and effectively place the output in the market.

7. Cost Analysis

Managerial economics provide various cost concepts and cost curves that facilitate in determining cost-output relationship both in short-run and long-run.

8. Pricing Strategies

Managerial economics provide various cost concepts and cost curves that facilitate in determining cost-output relationship both in short-run and long-run.

9. Market Structure Analysis

The techniques and concepts of managerial economics analyze the market structure and guide in taking necessary decisions that are required for a firm to exist in the market.

10. Investment and Capital Budgeting Decisions

The concept of opportunity cost provided by managerial economics facilitates in making appropriate investment decisions and choose the best alternative that fits the organizational requirements.

11. Marketing Strategies

Managerial economics provide marketing strategies like

- Product policy
- Sales promotion
- Segmentation, Targeting and positioning of markets.

12. Economics of Scale

Managerial economics in the long-run helps a firm to enjoy economics and diseconomics of scale.

13. Profit Management

Managerial economics mainly concentrates on the primary goal of a firm i.e., profit maximization. It deals with the activities like profit estimation and profit planning.

14. Input and Output Analysis

The concept of production function managerial economics depicts the input and output relationship.

15. Inventory Control

Effective inventory control techniques of managerial economics readily meet the organizational requirements.

Q8. What are the Responsibilities of Business economics.

Ans :

A business economist is well familiar with his responsibilities. He must keep in the mind the main objective of making a reasonable profit on the invested capital in his firm. Firms are not always after profit-maximization, but to continue in business, every firm has to operate for profit. Therefore, a business economist has the main responsibility of helping the management to make more profits than before. All his other responsibilities flow from this basic obligation. The responsibilities of a business economists are summarized below :

1. Making successful Forecasts

Managements have to take decisions concerning the future and it is uncertain. This uncertainty cannot be eliminated altogether but it can be reduced through scientific forecasts of the economic environment to his employers. This is required for business planning. If a business economist can make successful forecasts about business trends, the management will hold him in great esteem.

A wise managerial economist will revise his forecasts from time to time keeping in view new developments in his business. As soon as he finds a change in his forecasts, he has to alert the management about it. He assists the management in making the needed adjustments. This will help him to strengthen his position as a member of the managerial team.

2. Maintaining Relationships

The managerial economists must establish and maintain contacts with data sources for his analysis and forecasts. He makes contacts with individual who are specialists in the different fields. He must join professional associations and subscribe to the journals giving him fresh and latest information. In other words, his

business biggest quality is his ability to obtain information quickly by establishing contacts with the sources of such information.

3. Earning full Status on the Managerial team

A business economist has to participate in decision-making and forward- planning. For this he must be able to earn full status on the business team. He must be prepared to take up assignments on special project also. He should be able to express himself clearly so that his advice is understood and accepted. Finally, he must be in tune with the industry's thinking, and not lose the national perspective in giving advice to the management.

Thus, we can conclude from our discussion that managerial economists can earn an important place in the managerial team only if they understand and undertake his responsibilities.

Q9. Managerial economics is prescriptive rather than descriptive". Discuss.

Ans :

Economics studies various economic activities of mankind. Whether the economics study activities, as they ought to? It involves saying whether economics is a positive science, which studies things as they are examples. Physics, Chemistry, etc. Positive sciences do not suggest how things should work, but study things as they actually work or behave.

Normative science study things, as they ought to. As a matter or fact, the positive sciences simply describe, while the normative sciences simply prescribe.

Whether economics is a positive science or a normative science is a controversial question. According to economists like professors Marshall and Pigou, the ultimate object of the study of any science is to contribute to human welfare. According to these economists, economics should be a normative science.

It should be able to prescribe guidelines for the conduct of economic activities. Economists have to be both tool makers and tool users. It means that not only economists should build up the economic theory also, at the same time, they should provide policy measures.

According to prof. Robbins, economics is a positive science. Science is a search for truth and economics should study the truth as it is and not as it ought to be. When we express opinions, our own value enters into our consideration.

In the study of a problem at a given point of time, not only economic considerations but also many other considerations, such as ethical, political, etc., must be considered. It is after weighing the relative importance of these various factors that a policy decision is to be taken.

Therefore, differences will be in respect of policy prescription and it is, therefore, better to keep away from areas which are controversial and study the facts as they are. However, prof. Robbin's view is not accepted by many.

There is a need to strike a balance between these two extreme views. The main function of economics, as Lord Keynes has said, is not to provide a body of settled conclusions immediately applicable in policy. It provides a method, or a technique of thinking, which enables its possessor to draw correct conclusions. It means that those who know economics can make intelligent analyses of economic problems.

This might provide them some guidelines for the conduct of economic affairs. Thus, economists can give directional advice and then leave the decision taking function to the supreme bosses.

The main task of an economist is not to stand in the forefront of attack (i.e., to provide policy) but to stand behind the lines, in order to provide the armoury of knowledge, i.e., to indicate the implications of the various policy measures.

Therefore managerial economics is a blending of pure or positive science with applied or normative science. It is positive when it is confined to statements about causes and effects and to functional relations of economic variables. It is normative when it involves norms and standards, mixing them with cause effect analysis.

One cannot disregard the normative functions of managerial economics, though the discipline may be treated primarily as a positive science. Essentially, managerial economics is a logic of rational choice and a science for the betterment of business management, which cannot and should not refrain from essential value judgments.

As an applied social science, managerial economics is firmly rooted in the realm of social values and problems: hence it cannot be and should not be made a pure value free science. Managerial economics is something more than a science.

Managerial economists should seek to understand and examine not only what is happening in the business field; they should also seek to devise or guide in formulating and choosing alternative policies they may influence the course of business events for the betterment of the society at large. Hence managerial economics is a mix of positive and normative, considerations in scientific approach.

Q10. What are the limitations of managerial economics.

Ans :

Thought managerial economics provides solutions to various business problems, it is criticized on the following grounds;

1. Determination of demand and cost of a particular product is not always easy because of prevailing uncertain marketing conditions. The uncertainties in the environment impose a lot of difficulty for obtaining demand and cost functions accurately.
2. Marginal analysis of a product is not always a base because it may not be relevant to certain industries.
3. The forecast made by managerial economist should be accurate. But it is not possible because future is uncertain.

Q11. Distinguish between traditional economics and managerial economics.

Ans :

Managerial is usually described as the economics applied in managerial decision-making. It is that branch of economics which bridges the gap between pure economic theory and managerial practice. But there are certain differences between managerial economics and traditional economics. The following table gives the differences between managerial economics and traditional economics.

Comparison between Traditional Economics and Managerial Economics

S.No.	Traditional Economics	S.No.	Managerial Economics
1.	Traditional economics is both microeconomic and macroeconomic in nature.	1.	Managerial economics is only microeconomic in nature.
2.	Traditional economics has a wide scope. It deals with each and every aspect of the firm.	2.	Managerial economics has a limited scope. It is concerned with decision-making and economic theories that guide the managerial decision-making.
3.	Traditional economics is both normative and positive science.	3.	Managerial economics is a normative science,
4.	Traditional economics is concerned with theoretical aspects of the firm.	4.	Managerial economics deals with practical aspects of the firm.
5.	Traditional economics considers only the economic aspects of a problem while decision-making.	5.	Managerial economics considers both economic and non-economic aspects of a problem while decision-making.
6.	Traditional economics deals with both micro and macro problems of a firm.	6.	Managerial economics is concerned with decision-making of a firm.

1.4 Fundamental Concepts / Principles in Business Economics

Q12. What are the various fundamental concepts in business economics?

Ans :

Fundamental Concepts are the basic economic tools or principles for the entire extent of managerial economics. Managerial Economics offers a number of principles and analytical tools which are generally used by modern business organisations in decisions making process.

The Fundamental concepts in managerial economics are given below:

1. Opportunity cost principle,
2. Increment principle,
3. Principle of time perspective,
4. Discounting principle, and
5. Equi-marginal principle.
6. Scarcity Principle
7. Marginalism
8. Risk And Uncertainty
9. Efficiency
10. Externality
11. Trade-off.

1.4.1 Concept of Opportunity Cost

Q13. Define opportunity cost? Explain the importance of opportunity cost.

Ans : **(Dec.-20, May-19, Dec.-16)**

Opportunity cost of a decision is the sacrifice of alternative courses of action for that decision. It is the problem revenue from alternative sacrificed. Opportunity cost may be defined as the revenue foregone or opportunity lost by not using the resources in second best alternative use. These are also called imputed costs. Opportunity cost requires measurement of sacrifice. It measures the sacrifice made for taking a decision. The concept can be explained by following points:

(i) The opportunity cost of the funds employed in one's own business is the interest that could be earned on those funs had they been employed in other ventures;

(ii) The opportunity cost of the time an entrepreneur devotes to his own business is the salary he could earn by seeking employment;

(iii) The opportunity cost of using a machine to produce one product is the earnings forgone which would have been possible from other products:

(iv) The opportunity cost of using a machine that is useless for any other purpose is zero since its use requires not sacrifice of other opportunities.

(v) If a machine can produce either X or Y, the opportunity cost of producing a given quantity of X is therefore the quantity of Y which it would have produced. If that machine can produce 10 units of X or 20 units of Y, the opportunity cost of 1 X is 2Y.

(vi) Suppose we have on information about quantities produced, but have information about their prices. In this case, the opportunity costs can be computed in terms of the ratio of their respective prices, say $\frac{Px}{Py}$.

(vii) The opportunity cost of holding Rs.500 as cash in hand for one year is the 10% rate of interest, which would have been earned had the money been kept as fixed deposit in a bank.

Thus, it should be clear that opportunity costs require ascertainment of scarifies. If a decision involves no sacrifice, its opportunity cost in nil.

For decision-making, opportunity costs are the only relevant costs. The opportunity cost principle may be stated as under: The cost involved in any decision consists of the sacrifice of alternatives required by that decision. If there are no sacrifices, there is no cost.

Opportunity cost need not be expressed in monetary terms. It could be expressed in terms of goods as well. In economic terminology, opportunity cost need not necessarily be nominal variable it could be a real variable as well.

Importance of Opportunity Costs

In managerial decision-making, opportunity cost concept is very important. The economic significance of opportunity cost is as follows:

1. It Helps in Determining Relative Price of Goods

This concept is useful in the determination of the relative prices of different goods. For example, if a given amount of factors can produce one table or three chairs, then the price of one table will tend to be equal to three times that of one chair.

2. Fixation of Remuneration to a Factor

This concept is also useful in fixing the price of a factor. For example, let us assume that the alternative employment of a college professor is to work as an officer in an insurance company at a salary of ` 10,000 per month. In such a case he has to be paid at least ` 10,000 to continue to retain him in the college.

3. Efficient Allocation of Resources

The concept is also useful in allocating the resources efficiently. For example, opportunity cost of one table is three chairs and price of a chair is `100, while the price of a table is ` 400. Under such conditions it is beneficial to produce one table rather than

three chairs. Because, if he produces three chairs, he will get only `300, whereas a table fetches him ` 400, i.e, `100 more. Hence it helps manager to decide what should be produced.

Q14. Explain briefly about incremental principle concept.

Ans : **(Dec.-18, Imp.)**

Increment concept is closely related to the marginal costs and marginal revenues of economics theory. Incremental concept involves estimating the impact of decision alternatives on costs and revenues, emphasizing the changes in total cost and total revenue resulting from changes in prices, produces, procedures investments or whatever may be at stake in the decision.

The two basic components of incremental reasoning are: incremental cost and incremental revenue. Incremental cost may be defined as the change in total cost resulting from a particular decision. Incremental revenue is the change in total revenue resulting from a particular decision.

The incremental principle may be stated as under :

(i) It increases revenue more than costs;

(ii) It decreases some costs to a greater extent than it increases others;

(iii) It increases some revenues more than it decreases others; and

(iv) It reduces costs more than revenues.

Some businessmen take the view that to make an overall profit, they must make a profit on every job. The result is that they refuse orders that do not cover full cost (labor, materials and overhead) plus a provision for profit. Incremental reasoning indicates that this rule may be consistent with profit maximisation in the short run. A refusal to accept business below full cost may mean rejection of a possibility of adding more to revenue than to cost. The relevant cost in not the full cost but rather the incremental cost.

Example

Suppose a new order is estimated to bring in additional revenue of Rs. 5,000. The costs are estimated as under:

Labour	Rs. 1,500
Material	Rs. 2,000
Overhead (Allocated at 120% of labour cost)	Rs. 1,800
Selling administrative expenses (Allocated at 20% of labour and material cost)	Rs. 700
Total Cost	Rs. 6,000

The order at first appears to be unprofitable. However, suppose, if there is idle capacity, which can be, utilised to execute this order then the order can be accepted. If the order adds only Rs. 500 of overhead (that is, the added use of heat, power and light, the added wear and tear on machinery, the added costs of supervision, and so on), Rs. 1,000 by way of labour cost because some of the idle workers already on the payroll will be deployed without added pay and no extra selling and administrative cost then the incremental cost of accepting the order will be as follows.

Labour	Rs. 1,500
Material	Rs. 2,000
Overhead	Rs. 500
Total Incremental Cost	Rs. 3,500

While it appeared in the first instance that the order will result in a loss of Rs. 1,000, it now appears that it will lead to an addition of Rs. 1,500 (Rs. 5,000- Rs. 3,500) to profit. Incremental reasoning does not mean that the firm should accept all orders at prices, which cover merely their incremental costs. The acceptance of the Rs. 5,000 order depends upon the existence of idle capacity and labour that would go unutilised in the absence of more profitable opportunities. Earley's study of "excellently managed" large firms suggests that progressive corporations do make formal use of incremental analysis. It is, however, impossible to generalise on the use of incremental principle, since the observed behaviour is variable.

1.4.2 Time Perspective

Q15. Define time perspective?

Ans : **(Dec.-20, Imp.)**

Principle

A decision by the firm should take into account of both short-run and long-run effects on revenues and cost & maintain the right balance between the long run and short run.

According to this principle, a manger/decision maker should give due emphasis, both to short-term and long-term impact of his decisions, giving apt significance to the different time periods before reaching any decision. Short-run refers to a time period in which some factors are fixed while others are variable. The production can be increased by increasing the quantity of variable factors. While long-run is a time period in which all factors of production can become variable. Entry and exit of seller firms can take place easily. From consumers point of view, short-run refers to a period in which they respond to the changes in price, given the taste and preferences of the consumers, while long-run is a time period in which the consumers have enough time to respond to price changes by varying their tastes and preferences.

Example

ABC is a firm engaged in continuous production of X commodities (long run). In the production process, it is having daily an ideal time (free time) for few hours. In that ideal time, firm can take an order for manufacturing other similar goods instead of wasting time. By manufacturing goods in the ideal time firm does not incur any extra fixed cost like (salaries, wages and rent and) because it is constant. So the fixed cost is absent in the production which is done in the ideal time. Generally in production of goods, fixed and variable cost (raw material & labour) is present. However, here the production made in the ideal time, fixed cost is absent. This shows the cost is reduced in production that is made in the ideal time. Investment made in the business can also be recovered very quickly and in short time.

For example

Suppose there is a firm with a temporary idle capacity. An order for 5000 units comes to management's attention. The customer is willing to pay Rs 4/- unit or Rs. 20000/- for the whole lot but not more. The short run incremental cost (ignoring the fixed cost) is only Rs. 3/-. There fore the contribution to overhead and profit is Rs. 1/- per unit (Rs. 5000/- for the lot) Analysis: From the above example the following long run repercussion of the order is to be taken into account:

If the management commits itself with too much of business at lower price or with a small contribution it will not have sufficient capacity to take up business with higher contribution.

If the other customers come to know about this low price, they may demand a similar low price. Such customers may complain of being treated unfairly and feel discriminated against.

In the above example it is therefore important to give due consideration to the time perspectives. "a decision should take into account both the short run and long run effects on revenues and costs and maintain the right balance between long run and short run perspective".

Here the principle of time perspective applies, where maintains right balance between long run and short-run markets.

1.4.3 Discounting Principle

Q16. What do you understand by discounting principle.

Ans : **(May-19, Dec.-16, Imp.)**

It is the One of the fundamental ideas in economics is that a rupee tomorrow is worth than a rupee today. This seems similar to saying that a bird in hand is worth two in the bush. A simple example would make this point clear. Suppose a person is offered a choice to make between a gift of Rs.100 today or Rs.100 next year. Naturally he will choose the Rs.100 today. This is true for two reasons.

First, the future is uncertain and there may be uncertainty in getting Rs. 100 if the present opportunity is not availed of secondly, even if he is sure to receive the gift in future, today's the Rs.100 of today will become Rs.108 whereas if he does

not accept Rs.100 today, he will get Rs.100 only one year hence.

Naturally, he would prefer the first alternative because he is likely to gain by Rs. 8 in future. Another way of paying the same thing is that Rs.100 one year hence is not equal to Rs.100 one year hence? To find it out, we shall have to find out the relevant rate of interest which one would earn if one decides to invest the money.

Suppose the rate of interest is 8 per cent. Then we shall have to discount Rs.100 at 8 percent in order to ascertain how much money today will become Rs.100 one year after. The formula is :

$$V = \frac{Rs.100}{1+i}$$

where

V = present value

i = rate of interest.

1.4.4 Equi-Marginal Principle

Q17. Explain briefly about equi-marginal principle.

Ans : **(May-19)**

This principle deals with the allocation of the available resources among the alternative activities. According to this principle, an input should be so allocated that the value added by the last unit is the same in all cases. This generalization is called the equi-marginal principle.

Definitions

(i) **According to Ferguson,** "Law of equi-marginal utility states that to maximize utility, consumers may allocate their limited incomes among goods and services in such a way that the marginal utilities per dollar (rupee) of expenditure on the last unit of each good purchased will be equal".

(ii) **According to Marshall,** "If a person has a thing which he can put to several uses, he will distribute it among these uses in such a way that it has the same marginal utility in all".

Suppose a firm is involved in three activities viz., A, B and C activity. All these activities require services of labor. The firm should allocate the avail labor in these activities in such a manner that the value of Marginal Product of labor is equal in all the three activities. In symbols:

$$VMP_{La} - VMP_{Lb} = VMP_{Lc}$$

Here L indicates labor and a, b, c represent activities.

For example, if in activity 'A', the value of marginal product of labor is ` 20 while that in activity 'B' it is ` 30. Hence, it is profitable to shift labor from activity 'A' to activity 'B' thereby expanding activity 'B' and reducing activity 'A'. The optimum will be reached when the value of marginal product is equal in all the three activities.

Assumptions

The major assumptions of the law of equi-marginal utility are as follows:

1. **Utility can be Measured:** Utility can be measured in cardinal numbers.
2. **Consumer is Rational:** Consumer is rational. He wants maximum satisfaction from his income. He is not influenced by fashion and habits.
3. **Constant Income:** The income of the consumer is constant. In other words, the income of the consumer is fixed and limited.

4. **Constant Price:** The prices of goods remain constant.
5. **Constant Marginal Utility:** The marginal utility of money remains constant.
6. **Divisible Goods:** A good can be divided in small portions. It implies that the consumer can spend his income as he wishes.
7. **Knowledge of Utility:** The consumer has all the knowledge of the utility available from various goods.
8. **Independent Utility:** Utility that a consumer gets from a commodity depends upon the quantity of that very commodity only. It is not affected by the utility derived from other goods.
9. **Constant Budget Period:** Consumption is made at a specific time period. It means that the budget period of the consumer is constant.

Explanation of Equi-Marginal Principle

This law can be explained with the help of the table. Suppose, the income of a person is rupees five. He wants to spend this limited income (`5) on two goods - mangoes and milk. Also suppose, both the goods sell at rupee one per kg.

Table : Law of Equi-Marginal Utility

Rupees	M.U. of Mangoes	M.U. of Milk
1.	12 first (`)	10 Third (`)
2.	10 Second (`) 8 Fifth (`)	
3.	8 Fourth (`) 6	
4.	6	4
5.	4	2

The above-mentioned table shows that in order to get the maximum satisfaction, the consumer will spend, his total income of `5. By spending `3 on the mangoes and on milk, 8 units of marginal utility is obtained from the third rupee spent on mangoes. From the second rupee spent on milk too, he gets 8 units of marginal utility.

Thus, the consumer will get equal marginal utility from the last rupee spent on both the goods. This distribution of the consumer's income, maximizes his total satisfaction. He is said to be in equilibrium:

Utility obtained from mangoes = 12 + 10 + 8 = 30 units.

Utility obtained from milk = 10 +8 = 18 units.

Total utility = 30 + 18 = 48, units, i.e., (Maximum satisfaction)

If the consumer spends his income in some other manner, his total utility will decrease. Suppose, he spends one rupee more on mangoes and one rupee less on milk. From the four rupees spent on mangoes, the utility obtained from mangoes will be 12 + 10 + 8 +6 = 36 units. From the one rupee spent on milk, 10 units of utility will be obtained. In this way, from the total five rupees, 36 + 10 = 46 units of utility will be obtained. Thus, there has been a reduction of 2 units in the total utility. So, expenditure in any other way will not give so much satisfaction as could be obtained from spending in accordance with this law.

Certain Aspects of the Equi-Marginal Principle

Certain aspects of the equi-marginal principle need clarification :

1. The values of marginal products are net of incremental costs. In activity B we may add one unit of labor with an increase in physical output of 100 units. Each unit is worth 50 paise so that the 100

units will sell for ` 50. But the increased output consumes raw materials, fuel and other inputs so that variable costs in activity B (not counting the labor cost) are higher. Let us say that the incremental costs are ? 30 leaving a net addition of ` 20. The value of the marginal product relevant for our purpose is thus ` 20.

2. If the revenues resulting from the addition of labor are to occur in future, these revenues ought to be discounted before comparisons in the alternative activities are possible. Activity A may produce revenue immediately but activities B, C and D may take 2, 3 and 5 years respectively. Here the discounting of these revenues will render them comparable.

3. The measurement of the value of the marginal product may have to be corrected if the expansion of an activity requires a reduction in the prices of the output. If activity B represents the production of radios and it is not possible to sell more radios without a reduction in price, it is necessary to make adjustment for the fall in price.

4. The equi-marginal principle may break under sociological pressures. **For example,** due to inertia, activities are continued simply because they exist. Again, motivated by empire building, managers may keep on expanding activities to fulfill their ambition for power. Departments which are already over-budgeted often use some of their excess resources to build-up propaganda machines (public relations offices) to win additional support. Governmental agencies are more prone to bureaucratic self-perpetuation and inertia.

Business Applications of Equi-Marginal Principle

Multi-market seller	$MR_1 = MR_2 = MR_3 =$ ... MR_n
Multi-plant monopolist	$MC_1 = MC_2 = MC_3 =$ ... MC_n
Multi-factor employer	$MP_1 = MP_2 = MP_3 =$ ... MP_n
Multi-product firm	$M\pi_1 = M\pi_2 = M\pi_3 =$ ... $M\pi_n$

Note

MR = Marginal Revenue; MC = Marginal Costs, MP = Marginal Products and M. n = Marginal Profits, n refers to n markets, plants, factors and products respectively.

In the real world, it may not always be possible to have data for each successive units. In that case, equimarginalism will be replaced by the concept of equi-incrementalism.

Q18. What do you understand by consumers surplus.

Ans :

Consumer surplus is defined as the difference between the price that the consumer is prepared to pay and the price that he is exactly paying'; In other words, it is the value consumers get from a good without paying for it.

In many cases, the consumer is prepared to pay a higher price for the product because of many reasons such as he wants the product badly, or he likes the particular design and hence wants to pay even a higher price, and so on. Take the case of, for instance, salt. Can we take food with out salt? No. If the price of salt goes up to Rs.10 per kg, the consumer would be prepared to pay for it. If the salt is available for Rs. 5 per kg, then the consumer surplus is Rs. 5 per kg.

The concept of consumer's surplus is very significant for the monopolist or the trader to assess where the customer is prepared to pay a higher price, and at what point exactly he is paying a low price. In such a case, the trader can marginally increase the price without losing the demand.

Q19. What is indifference curve? Explain the properties of indifference curve.

Ans :

An indifference curve is a curve which reveals certain combinations of goods or services which yields mfn the same utility. The consumer is indifferent to a particular combina-tion as every combination is yielding him the same utility.

From figure, it is clear that any combination of AD, or BE, or CF of goods X and Y yield the consumer 200 units of satisfaction. When the consumer is indifferent for a particular combination, it is called an indifference curve. In case he wants higher satisfaction, he has to operate on the next level of indifference curve which yields him 300 units.

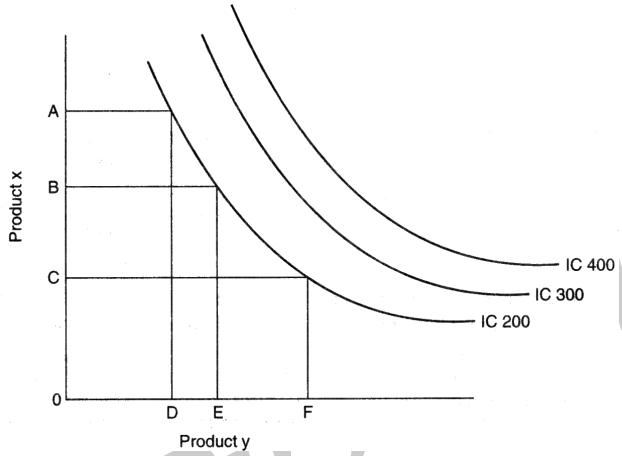

Fig.: Indifference Curves Showing Consumer Equilibrium

Assumptions underlying indifference curves:

(a) The consumer behaves rationally to maximise his satisfaction.

(b) The prices and incomes of the consumer are defined for analysis (Tastes and preferences of the consumer do not change during the analysis).

Properties of Indifference Curve

(a) It slopes downwards from left to right

To maintain the total units of satisfaction, if the consumption of product A is increased, the consumption of product B has to be reduced. This leads to a downward slope in the curve.

(b) It is convex to the origin

Here the consumer is substituting one product for the other. So the rate at which the substitution takes place determines the degree of convexity. This is called marginal rate of substitution which implies the quantity of product A given up to obtain certain quantity of product B.

(c) It cannot intersect with another indifference curve

Two indifference curves can not intersect with each other because each is defined at a particular level of satisfaction. In case the consumer wants higher or lesser satisfaction he chooses that particular indifference curve to operate. Two indifference curves can neither touch, nor have a common point and they cannot intersect.

Q20. Distinguish principle of time perspective from discounting principle.

Ans : **(June-18)**

S.No.	Basis of Distinction	Time Perspective	Discounting Principle
1.	**Concept**	According to this concept, a decision should take into account both short-run and long-run effects on revenues and costs.	According to this concept, a decision effects costs and revenues at future dates,
2.	**Importance**	It guides in making decisions related to production activities of the firm.	It guides in overall decision making of the firm,
3.	**Applicability**	It helps in understanding the production activities, time and factors required for production.	It helps in determining the cash flows for a particular period,
4.	**Decision Making**	Managers should consider effect of both short run and long run while making decisions.	Managers discount the future costs and revenues to present values before making decisions.

Q21. Write short notes on Forward Planning.

Ans : **(Aug.-21)**

Forward planning means taking into account future circumstances or requirements when you make a plan. In a business environment it is a system that is concerned with the long-term future of the business, so it takes into consideration possibilities of growth and development as well as uncertainties and other downfalls that could obstruct the business.

With forward planning, one of the goals is to minimize the number of future uncertainties that could occur. For example, a small business could forward plan during a recession and prepare for it to ensure that they will not lose large amounts of profit

Short Question and Answers

1. Define business economics?

Ans :

Business Economics, also called Managerial Economics, is the application of economic theory and methodology to business. Business involves decision-making; and business economics serves as a bridge between economic theory and decision-making in the context of business. Economic theories, economic principles, economic laws, economic equations, and economic concepts are used for decision making. On this ground students of commerce should know the importance of basic theories in actual business application.

Business economics is the study of the financial issues and challenges faced by corporations operating in a specified marketplace or economy. Business economics deals with issues such as business organization, management, expansion and strategy.

Business economics assists in the following,

(a) It helps in solving the business problems easily.

(b) It helps in improving the quality and accuracy of decisions.

(c) It facilitates in taking the right decision.

Thus, business economics deals with analyzing allocation of the resources available to a firm or other management among the activities of that unit.

The outcomes of positive analysis does not change with the changes in the norms. Positive statements are conditional in nature.

Meaning

Business economics is that part of economics which are related to economic activities and sole aim to growth in business. Every business is operated by some resources and these are limited. Business economics tells the techniques about how to utilize resources for maximum satisfaction.

Definitions

(i) According to MeNair and Meriam, " Managerial economics consists of the use of economic modes of thought to analysis business situations."

(ii) According to Joel Dean, "The purpose of managerial economics is to show how economic analysis can be used in formulating business policies."

(iii) According to Mansfield, "Managerial economics attempts to bridge the gap between the purely analytically problems that intrigue many economic theorists and the day-to-day decisions that the management must face."

2. Objectives of business economics.

Ans :

The various objectives of business economics are:

i) To integrate economic theory with business practice.

ii) To apply economic concepts: and principles to solve business problems.

iii) To employ the most modern instruments and tools to solve business problems.

iv) To allocate the scarce resources in the optimal manner.

v) To make overall development of a firm.

vi) To help achieve other objectives of a firm like attaining industry leadership, expansion of the market share etc.

vii) To minimise risk and uncertainty

viii) To help in demand and sales forecasting.

ix) To help in operation of firm by helping in planning, organizing, controlling etc.

3. Nature of business economics.

Ans :

The nature of business economics can be summarized as follows:

1. Demand Forecasting

Demand forecasting is an important topic studied in Business Economics. Every business firm initiates and continues its production process on the basis of the anticipation of more demand for its goods in the future. It makes research and conducts market survey with a view to know the tastes and fashions of the consumers. It pools up the resources and starts production for meeting the future demand. Business economics analyses the demand behaviour and forecasts the quantity demanded by the consumers.

2. Cost Analysis

Business Economics deals with the analysis of different costs incurred by the business firms. Every firm desires to minimize its costs and increase its output by securing several economies of scale. But is does not know in advance about the exact costs involved in production process. Business Economics deals with the cost estimates and acquaints the entrepreneurs with the cost analysis of their firm.

3. Profit Analysis

Every business firm aims to secure maximum profits. But at the same time it faces uncertainty and risk in getting profits. It has to make innovations in production and marketing of its goods. Business Economics deals with the matters relating to profit analysis like profit techniques, policies and break-even analysis.

4. Limitations of managerial economics.

Ans :

Thought managerial economics provides solutions to various business problems, it is criticized on the following grounds;

1. Determination of demand and cost of a particular product is not always easy because of prevailing uncertain marketing conditions. The uncertainties in the environment impose a lot of difficulty for obtaining demand and cost functions accurately.
2. Marginal analysis of a product is not always a base because it may not be relevant to certain industries.
3. The forecast made by managerial economist should be accurate. But it is not possible because future is uncertain.

5. Define opportunity cost.

Ans :

Opportunity cost of a decision is the sacrifice of alternative courses of action for that decision. It is the problem revenue from alternative sacrificed. Opportunity cost may be defined as the revenue foregone or opportunity lost by not using the resources in second best alternative use. These are also called imputed costs. Opportunity cost requires measurement of sacrifice. It measures the sacrifice made for taking a decision. The concept can be explained by following points:

i) The opportunity cost of the funds employed in one's own business is the interest that could be earned on those funs had they been employed in other ventures;

ii) The opportunity cost of the time an entrepreneur devotes to his own business is the salary he could earn by seeking employment;

iii) The opportunity cost of using a machine to produce one product is the earnings forgone which would have been possible from other products:

iv) The opportunity cost of using a machine that is useless for any other purpose is zero since its use requires not sacrifice of other opportunities.

v) If a machine can produce either X or Y, the opportunity cost of producing a given quantity of X is therefore the quantity of Y which it would have produced. If that machine can produce 10 units of X or 20

units of Y, the opportunity cost of 1 X is 2Y.

vi) Suppose we have on information about quantities produced, but have information about their prices. In this case, the opportunity costs can be computed in terms of the ratio of their respective prices, say $\frac{Px}{Py}$.

vii) The opportunity cost of holding Rs.500 as cash in hand for one year is the 10% rate of interest, which would have been earned had the money been kept as fixed deposit in a bank.

6. Importance of Opportunity Costs

Ans :

In managerial decision-making, opportunity cost concept is very important. The economic significance of opportunity cost is as follows:

1. It Helps in Determining Relative Price of Goods

This concept is useful in the determination of the relative prices of different goods. For example, if a given amount of factors can produce one table or three chairs, then the price of one table will tend to be equal to three times that of one chair.

2. Fixation of Remuneration to a Factor

This concept is also useful in fixing the price of a factor. For example, let us assume that the alternative employment of a college professor is to work as an officer in an insurance company at a salary of ` 10,000 per month. In such a case he has to be paid at least ` 10,000 to continue to retain him in the college.

3. Efficient Allocation of Resources

The concept is also useful in allocating the resources efficiently. For example, opportunity cost of one table is three chairs and price of a chair is `100, while the price of a table is ` 400. Under such conditions it is beneficial to produce one table rather than three chairs. Because, if he produces three chairs, he will get only `300, whereas a table fetches him ` 400, i.e, `100 more. Hence it helps manager to decide what should be produced.

7. Discounting principle.

Ans :

It is the One of the fundamental ideas in economics is that a rupee tomorrow is worth than a rupee today. This seems similar to saying that a bird in hand is worth two in the bush. A simple example would make this point clear. Suppose a person is offered a choice to make between a gift of Rs.100 today or Rs.100 next year. Naturally he will choose the Rs.100 today. This is true for two reasons.

First, the future is uncertain and there may be uncertainty in getting Rs. 100 if the present opportunity is not availed of secondly, even if he is sure to receive the gift in future, today's the Rs.100 of today will become Rs.108 whereas if he does not accept Rs.100 today, he will get Rs.100 only one year hence.

Naturally, he would prefer the first alternative because he is likely to gain by Rs. 8 in future. Another way of paying the same thing is that Rs.100 one year hence is not equal to Rs.100 one year hence? To find it out, we shall have to find out the relevant rate of interest which one would earn if one decides to invest the money.

Suppose the rate of interest is 8 per cent. Then we shall have to discount Rs.100 at 8 percent in order to ascertain how much money today will become Rs.100 one year after. The formula is :

$$V = \frac{Rs.100}{1+i}$$

where

V = present value

i = rate of interest.

8. Assumptions of the law of equi-marginal

Ans :

i) Utility can be Measured: Utility can be measured in cardinal numbers.

ii) Consumer is Rational: Consumer is rational. He wants maximum satisfaction from his income. He is not influenced by fashion and habits.

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The concept of consumer's surplus is very significant for the monopolist or the trader to assess where the customer is prepared to pay a higher price, and at what point exactly he is paying a low price. In such a case, the trader can marginally increase the price without losing the demand.

10. What is indifference curve?

Ans :

An indifference curve is a curve which reveals certain combinations of goods or services which yields mfn the same utility. The consumer is indifferent to a particular combina-tion as every combination is yielding him the same utility.

From figure, it is clear that any combination of AD, or BE, or CF of goods X and Y yield the consumer 200 units of satisfaction. When the consumer is indifferent for a particular combination, it is called an indifference curve. In case he wants higher satisfaction, he has to operate on the next level of indifference curve which yields him 300 units.

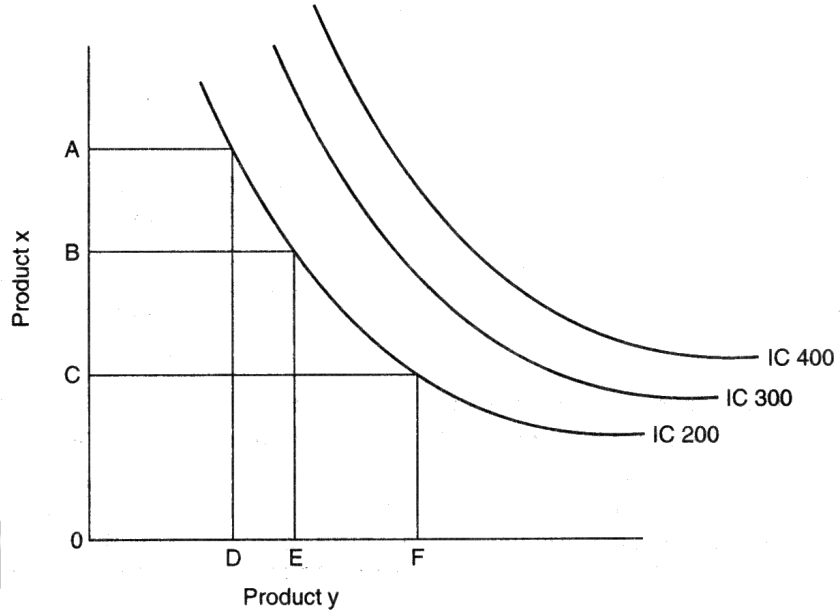


Fig.: Indifference Curves Showing Consumer Equilibrium

Assumptions underlying indifference curves:

(a) The consumer behaves rationally to maximise his satisfaction.

(b) The prices and incomes of the consumer are defined for analysis (Tastes and preferences of the consumer do not change during the analysis).

Choose the Correct Answers

1. Which of the following is true? [b]

   (a) Managerial Economics deals with issues such as inflation and employment.

   (b) Managerial Economics deals with the issues relating to one single individual or firm.

   (c) Managerial economics deals with the issues which are macro in nature.

   (d) Managerial economics deals with the issues which affect the world economy.

2. Which of the following is not true? [b]

   (a) Managerial economics integrates economic theory with business practice.

   (b) Managerial economics facilitates decision-making and forward planning.

   (c) Planning experts mostly use managerial economics.

   (d) Managerial economics integrates economic theory with employment theory.

3. Which of the following statement is correct? [a]

   (a) Managerial economics is the application of economic theory with methodology to business administration practice.

   (b) Managerial economics is the application of micro economic theory to macro economic issues.

   (c) Managerial economics is the application of economic theory to issues such as floods and disasters.

   (d) Managerial economics is the application of economic theory to welfare issues.

4. Which of the following is correct? [a]

   (a) Managerial economics seeks to understand and analyse the problems of business decision-making.

   (b) Managerial economics seeks to explore the issues relating to the development of the nation.

   (c) Managerial economics seeks to underline the development issues.

   (d) Managerial economics seeks to identify the issues relating to unemployment and suggest ways to overcome the problems of unemployment.

5. The statements that contain the word 'ought to' are called [b]

   (a) Prescriptive (b) Normative

   (c) Assertive (d) Negative

6. Managerial economics is close to [a]

(a) Micro economics (b) Macro economics

(c) Theory of Income and Employment (d) Theory of Wages and Employment

7. Integration of economic theory with business practice is called [a]

(a) Managerial economics (b) Economics

(c) Macro economics (d) Micro economics

8. Who is the father of economics? [b]

(a) Max Muller (b) Adams Smith

(c) Karl Max (d) None of these above

9. Economics is the study of scarce resources and unlimited wants". Who said this? [b]

(a) Paul A. Samuelson (b) Prof. Lionel Robbins

(c) Adam Smith (d) Alfred Marshal

10. Which of the following cannot be verified by looking at the facts? [c]

(a) Positive statement (b) Prescriptive actions

(c) Normative statement (d) Welfare statement

11. Which of the following is not covered by Managerial Economics? [d]

(a) Price-output decision (b) Profit related decision

(c) Investment decision (d) Foreign direct investment (FDI) decision

Fill in the Blanks

1. Business Economics, also called _____ .
2. Business Economics deals with the analysis of different costs incurred by the _____ .
3. _____ consists of the use of economic modes of thought to analysis business situations.
4. _____ cost of a decision is the sacrifice of alternative courses of action for that decision.
5. _____ is closely related to the marginal costs and marginal revenues of economics theory.
6. _____ cost may be defined as the change in total cost resulting from a particular decision.
7. Incremental _____ is the change in total revenue resulting from a particular decision.
8. _____ utility states that to maximize utility, consumers may allocate their limited incomes among goods and services.
9. Utility can be measured in _____ .
10. _____ is made at a specific time period.

ANSWERS

1. Managerial Economics
2. Business Firms
3. Managerial Economics
4. Opportunity
5. Increment concept
6. Incremental
7. Revenue
8. Law of equi-marginal
9. Cardinal numbers
10. Consumption

UNIT II

Demand Concepts & Elasticity of Demand : Concept of Demand Determinates of Demand, Law of Demand, Exception to the Law of Demand, Elasticity of Demand, Types of Demand Elasticity, Uses of Demand Elasticity. Concept of Supply, Determinants of Supply, Law of Supply, Elasticity of Supply.

2.1 DEMAND CONCEPT

2.1.1 Demand

Q1. Define demand. What are the objectives of demand?

Ans :

In economic science, the term "demand" refers to the desire, backed by the necessary ability to pay. The demand for a good at a given price is the quantity of it that can be bought per unit of time at the price. There are three important things about the demand :

1. It is the quantity desired at a given price.
2. It is the demand at a price during a given time.
3. It is the quantity demanded per unit of time.

Meaning

Demand is the amount of particular economic goods or services that a consumer or group of consumers will want to purchase at a given price at a particular time.

Therefore, demand means desire backed up by adequate purchasing power to pay for the product when demanded and willingness to spend the money for the satisfaction of that desire.

Demand = Desire to buy + Ability to pay + Willingness to pay

Definitions

(i) According to Benham, "The demand for anything, at a given price, is amount of it, which will be bought per unit of time, at that price".

(ii) According to Bobber, "By demand we mean the various quantities of a given commodity or service which consumers would buy in one market in a given period of time at various prices".

(iii) According to G.L. Thiekettle, "The demand for any commodity or service is amount that will be bought at any given price per unit of time".

Objectives

1. Demand Forecasting

Forecasting of demand is the art of predicting demand for a product or a service at some future date on the basis of certain present and past behaviour patterns of some related events.

2. Production Planning

Demand analysis is prerequisite for the production planning of a business firm. Expansion of output of the firm should be based on the estimates of likely demand, otherwise there may be overproduction and consequent losses may have to be faced.

3. Sales Forecasting

Sales forecasting is based on the demand analysis. Promotional efforts of the firm should be based on sales forecasting.

4. Control of Business

For controlling the business on a sound footing, it is essential to have a well conceived budgeting of costs and profits that is based on the estimation of annual demand/sales and prices.

5. Inventory Control

A satisfactory control of business inventories, raw materials, intermediate goods, semi-finished product, finished product, spare parts, etc., requires satisfactory estimates of the future requirements which can be traced through demand analysis.

6. Growth and Long-Term Investment Programs

Demand analysis is necessary for determining the growth rate of the firm and its long-term investment programs and planning.

7. Economic Planning and Policy Making

Demand analysis at macro level for the nation as a whole is of a great help to the planners and policy-makers for a better planning and rational allocation of the country's productional resources. The Government can determine its import and export policies in view of the long- term demand forecasting and estimation for various goods in the country.

Q2. Explain different types of demand.

Ans : **(May-18)**

There are eight demand states and their details given below

1. Negative Demand : Product is disliked in general. The product might be beneficial but the customer does not want it.

For example, for dental care, and others have a negative demand for air travel.

2. No demand : Target consumers may be unaware and uninterested about the product.

For examples, Farmers may be not interested in new farming method. College students may not be interested in foreign language course

3. Latent demand : Consumers may share a strong need that cannot be satisfied by any existing product.

For examples, Harmless cigarette, safer neighborhood, more fuel efficient car.

4. Declining demand : When the demand of the product or service becomes lower.

For examples, Private colleges have seen application falls.

5. Irregular demand : Demand varies on a seasonal, daily and hourly basis.

For examples, Museums are under visited in week days and over crowded on week days.

6. Full demand : When the organization is pleased with their volume of business.

For example, Ideal Situation where supply is equal to demand.

7. Overfull demand : Demand level is higher that the organization can and want to handle.

For example, National park is terribly overcrowded in the summer.

8. Unwholesome demand : Those kinds of demands, not acceptable by the society.

For example, Cigarettes, hard drinks, alcohol.

Q3. What do you understand by demand functions? Explain its types.

Ans :

Demand Function

A demand function is a mathematical relationship between the quantity demanded of the commodity and its determinants. A demand function can be represented as,

Q = f (demand determinants)

Where,

Q = Quantity demanded of a commodity.

Types

Generally, a demand function is of two types,

1. Individual Demand Function

Individual demand function is a mathematical relationship between the demand by an individual consumer and the determinants of individual demand. Mathematically, it can be expressed as,

$Q_x = f(P_x, I, P_1 ... P_n, T, A, E_p, E_I U)$

Where,

Q_x = Quantity demanded of the commodity x

P_1 = Price of the commodity itself

I = Consumer's Income

$P_x ... P_n$ = Prices of the related goods

T = Consumer tastes and preferences

A = Advertisement

$\in_1$ = Consumer's expectation about future prices

E_j = Consumer's expectation about his/ her future income

U = Other determinants.

An individual demand function can also be defined as the functional relationship of the quantity demanded by an individual and its determinants.

2. Market/Aggregate Demand Function

Market/Aggregate demand function is the functional relationship between the market demand for a commodity and the determinants of market demand. Mathematically it can be expressed as,

$Q = f(P_x, I, P_1, ... P_n, T. A, E_p, E_I, P, D, U)$

Where,

Q_x = Quantity demanded of the commodity x.

P_x = Price of the commodity itself

I = Consumer's Income

$P_1 ... P_n$ = Prices of the related goods

T = Consumer tastes and preferences

A = Advertisement

E_p = Consumer's expectation about future prices

E_I = Consumer's expectation about his/her future income.

P = Population or market size

D = Distribution of consumers in the market according to income, age, gender etc.

U = Other determinants.

Comparison of Individual Demand Function and Market/Aggregate Demand Function

The major difference between the individual demand function and market demand function is that in market demand function, the size and the nature of the consumers in a given market are also considered. Mathematically the terms P-size of the market and D-distribution of consumers in the market are also added in market demand function.

Q4. Define demand curve? What are the characteristics of demand curve?

Ans :

The graphical representation of the demand schedule is known as demand curve. The demand curve always slopes downwards from left to right. This negative slope of the demand curve indicates the opposite relationship between the price and the quantity demanded.

Characteristics

The characteristics of demand curve can be summarized as follows:

1. Position of the Curve

A demand curve's position refers to its placement on a graph. Since economic analysts use the same graph to chart both a demand curve and the related, inverse supply curve, the scales representing price and quantity must remain the same. If a demand curve is positioned far to the right, it indicates a high quantity of demand from consumers at a given price. When a demand curve is low on the graph, it indicates that low prices create steady demand.

2. Slope of the Curve

The rate of change in demand over various price points gives a demand curve its slope. Demand curves can be concave, convex or form straight lines. In each case, the rate of change in quantity demanded as price decreases forms the changing angle of the curve. A steep demand curve means that price

reductions only increase quantity demanded slightly, while a concave demand curve that flattens as it moves from left to right reveals an increase in quantity demanded when low prices drop even slightly lower.

3. Shifting of Curve

Shift refers to a demand curve's change in position over time. As the demand curve moves to new positions on the graph, it reveals changing trends in consumer behavior. For example, when a demand curve falls on graph from one measuring period to another, it indicates that lower prices produce the same level of demand as higher prices did during an earlier measuring period. Comparing demand curves over time allows business leaders to make important decisions about changing prices or altering supply levels to maximize profit.

Q5. Why the demand curve slope downwards from left to right ?

Ans :

According to traditional approach, the cause of the slopping downward trend of demand curve is the application of the law of diminishing marginal utility. Professor Marshall expresses this view. J.R. Hicks, Allen and other modern economist argue that it is due to the income effect and substitution effect. Following are the main causes, which are responsible for this relationship and downward slopping of demand curve:

1. Entry and Exit of Consumer

If the price of a particular commodity falls, some new consumers enter in the market and start purchasing the commodity. The old consumers also start consuming more of the commodity. If the price increases, new consumers withdraw and old consumers start consuming lesser commodity. The result of the consumer's behaviour is the operation of law of demand and the downward of demand curve.

2. Law of Diminishing Marginal Utility

The satisfaction derived from the consumption of successive units goes on falling, because earlier units have partly satisfied our wants. In this way, every additional unit of the commodity will give us lesser utility (satisfaction). So a consumer wants to pay lesser price for additional unit and he only purchases additional unit when the price falls. Therefore demand curve come slopes down wards.

3. Multiple Uses of Goods

If the price of the goods falls, consumers use more of those particular goods for different purpose and quantity demand increases. For example, when the price of electricity falls, consumers use electricity for different purpose.

4. Substitution Effect

When the price of any substitute good falls, the consumer gives up the dearer good and buys additional units of the cheaper good. In the same way, when the price falls, the consumers, who are consuming other goods, are also attracted to the cheaper goods and it makes the demand curve downward slopping.

5. Income Effect

When the price of a commodity falls, the real income (purchasing power of money income) of the consumer increases. This enables the consumer to buy more units. For example, let money income of the consumer be 100, using this consumer wants to buy commodity 'X' whose price is 25 per kg. In that case consumer would buy only 4 kg. On the other hand, assuming money income to be constant (100), if the price of commodity falls to 20, he will be able to buy 5 kg. That is the real income of the consumer increases with the fall in price and vice versa.

Q6. Define demand schedule? Explain different types of demand schedule?

Ans :

A demand schedule is a tabular representation of the relationship between the amount demanded of a commodity and different price levels of that commodity. In other words, a demand schedule is a tabular statement of price and quantity

relationship. It relates to the amount of the commodity the consumer is willing to purchase corresponding to the given price of that commodity per unit of time.

Example

The table below is an example of a demand schedule of product x.

Price of the Commodity x (`)	Quantity Demanded of Commodity x (kg)
5	15
8	14
10	12
12	10
15	8
20	5

Characteristics

The following are the characteristics of a demand schedule,

- A demand schedule shows variation - in demand of a commodity at its varying prices.
- It indicates the behaviour of an individual consume in purchasing the commodity at a ernative prices.
- It shows the inverse relation between the quantity demanded and the price of the commodity.

Types

There are two types of demand such like,

(i) Individual demand schedule

(ii) Market demand schedule

(i) Individual Demand Schedule

An individual demand schedule is a tabular form showing the list of the quantities of a commodity that an individual consumer is willing to purchase corresponding to the given price of that commodity per unit of time. The table below shows a demand schedule of an individual consumer, say Mr. M for oranges.

Price of oranges per dozen (`)	Quantity demanded by Mr. M
45	2
38	3
30	4
25	6
20	10

(ii) Market Demand Schedule

Market demand schedule is a tabular form representing the list of quantities demanded of a commodity by all the buyers in a given market at different price levels. In other words, the market

demand schedule represents the total market demand at various prices. A market demand schedule is obtained as a combination of all individual demand schedules. Theoretically, a market demand schedule is obtained by compiling and combining all the individual demand schedules in a given market. Mathematically, it is obtained by the horizontal additions of quantities at various prices related in the individual demand schedules. The table below shows an example of a market demand schedule with individual consumers P, Q and R.

Price of the Commodity (`)	Quantity Demanded by Individuals A + B + C			Total Market Demand
6	1	1	2	4
5	2	3	4	9
4	3	5	5	13
3	4	6	7	17
2	5	7	10	22
1	6	8	12	26

Q7. What are the various reasons for change in demand?

Ans :

A change in demand occurs when the basic conditions of demand change. An alteration in the demand pattern is caused by many kinds of changes. Some of the important changes are:

1. Changes in Income

A change in the income of the consumer significantly influences his demand for most commodities. The demand for superior commodities in general and for comforts and luxury articles increases with a rise in the consumer's income. Similarly, overall demand generally decreases with a fall in income. In estimating demand function for commodities such as cars, for instance, changes in gross national product (GNP) or per capita real income is considered as crucial factors by the researchers in general.

2. Changes in Taste, Habits and Preference

When there is a change in taste, habits or preference of the consumer, his demand will change. When, a person gives up his smoking habit the demand for cigarettes decreases.

3. Change in Fashions and Customs

Fashions and customs of our society determine many of our demands. When these change, demands also change.

4. Change in the Distribution of Wealth

Through fiscal measures, government can reduce inequality of income and wealth and bring about a just distribution of wealth; consequently the demand pattern may change in a dynamic welfare society. Welfare programs like free medical aid, free education, pension schemes, etc., raise the

purchasing power of the poorer sections of the community and their standard of living, so the overall demand pattern may change.

5. Change in Substitutes

Changes in the supply of substitutes, change in their prices, and the development of new and better quality substitutes certainly affect the demand for the given product. For instance, introduction of ballpoint pens has caused a fall in the demand for fountain pens.

6. Change in Demand for Complementary Goods

When there is a change in the demand conditions of a complementary good (which is jointly demanded), there will be side effects on demand. For instance, a change in the demand for shoes will automatically bring about a similar change in the demand for shoe laces.

7. Change in Population

The market demand for a commodity substantially changes when there is change in the total population or change in its age or sex composition. For instance, if the birth rate is high in a country, more toys and chocolates will be demanded. But when the birth rate is substantially reduced through overall family planning efforts, their demand will decrease. Similarly, if the sex ratio of the country changes and if females outnumber males, demand for skirts will increase and that for shirts will decrease.

8. Advertisement and Publicity Persuasion

A clever and persistent advertisement and publicity programmes by the producers affects consumer's preference and causes alteration in the demand for products. Generally, demand for patent medicines and toilet articles are very much determined by salesmanship and publicity.

2.2 DETERMINANTS OF DEMAND

Q8. Explain the factors determining demand?

Ans : **(Dec.-19, Dec.-17, Imp.)**

The main factors determining demand are as follows:

1. Price of the Commodity

The law of demand states that if other things remain the same, the demand of the commodity is inversely related to its price. It implies that a rise in price of a commodity brings about a fall in its purchase and vice-versa. This happens because of income and substitution effects.

2. Income of the Consumer

The income of the consumer is another important variable which influences demand. The ability to buy a commodity depends upon the income of the consumer. When the income of the consumers increases, they buy more and when income falls they buy less. A rich consumer demands more and more goods because his purchasing power is high.

3. Tastes and Preferences

The demand for a product depends upon tastes and preferences of the consumers. If the consumers develop taste for a commodity they buy whatever may be the price. A favourable change in consumer preference will cause the demand to increase. Likewise an unfavourable change in consumer preferences will cause the demand to decrease.

4. Prices of Related Goods

The related goods are generally substitutes and complementary goods. The demand for a product is also influenced by the prices of substitutes and complements. When a want can be satisfied by alternative similar goods they are called substitutes, such as coffee and tea. When commodities are complement, a fall in the price of one (other things being equal) will cause the demand of the other to

rise such as car and petrol. Thus, the price of one good and the demand for another are inversely related.

5. Advertisement and Sales Propaganda

In modern times, the preferences of consumers can be altered by advertisement and sales propaganda. Advertisement helps in increasing demand by informing the potential consumers about the availability of the product, by showing the superiority of the product, and by influencing consumer choice against the rival products. The demand for products like detergents and cosmetics is mainly caused by advertisement.

6. Consumer's Expectation

A consumer's expectation about the future changes in price and income may also affect his demand. If a consumer expects a rise in prices he may buy large quantities of that particular commodity. Similarly, if he expects its prices to fall in future, he will tend to buy less at present. Similarly, expectation of rising income may induce him to increase his current consumption.

7. Growth of Population

The growth of population is also another important factor that affects the market demand. With the increase in population, people naturally demand more goods for their survival.

8. Weather Conditions

Seasonal factors also affect the demand. The demand for certain items purely depends on climatic and weather conditions. For example, the growing demands for cold drinks during the summer season and the demand for sweaters during the winter season.

9. Tax Rate

The tax rate also affects the demand. High tax rate would generally mean a low demand for the goods. At certain times the government restricts the consumption of a commodity and uses the tax as a weapon. A highly taxed commodity will have a lower demand.

10. Availability of Credit

The purchasing power is influenced by the availability of credit. If there is availability of cheap credit, the consumers try to spend more on consumer durables thereby the demand for certain products increase.

11. Pattern of Saving

Demand is also influenced by the pattern of saving. If people begin to save more, their demand will decrease. It means the disposable income will be less to purchase the goods and services. On the contrary, if saving is less their demand will increase.

12. Circulation of Money

An expansion or a contraction in the quantity of money will affect demand. When more money circulates among the people, more of a thing is demanded by the people because they have more purchasing power and vice versa.

2.3 LAW OF DEMAND

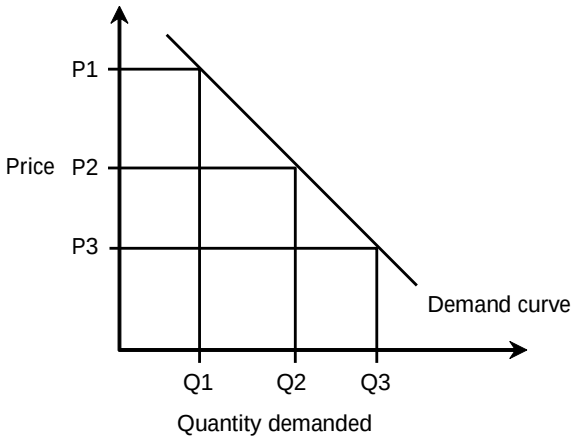
Q9. Define law of Demand? What are the assumptions of law of demand.

Ans : **(Dec.-18, Dec.-16, Imp.)**

The law of demand states that other factors being constant (cetris peribus), price and quantity demand of any good and service are inversely related to each other. When the price of a product increases, the demand for the same product will fall.

Description

Law of demand explains consumer choice behavior when the price changes. In the market, assuming other factors affecting demand being constant, when the price of a good rises, it leads to a fall in the demand of that good. This is the natural consumer choice behavior. This happens because a consumer hesitates to spend more for the good with the fear of going out of cash.



The above diagram shows the demand curve which is downward sloping. Clearly when the price of the commodity increases from price p3 to p2, then its quantity demand comes down from Q3 to Q2 and then to Q3 and vice versa.

Assumptions

The statement of the law of demand, demonstrates that this law operates only when all other things remain constant. These are then the assumptions of the law of demand. We can state the assumptions of the law of demand as follows:

1. Income level should remain constant

The law of demand operates only when the income level of the buyer remains constant. If the income rises while the price of the commodity does not fall, it is quite likely that the demand may increase. Therefore, stability in income is an essential condition for the operation of the law of demand.

2. Tastes of the buyer should not alter

Any alteration that takes place in the taste of the consumers will in all probability thwart the working of the law of demand. It often happens that when tastes or fashions change people revise their preferences. As a consequence, the demand for the commodity which goes down the preference scale of the consumers declines even though its price does not change.

3. Prices of other goods should remain constant

Changes in the prices of other goods often impinge on the demand for a particular commodity. If prices of commodities for which demand is inelastic rise, the demand for a commodity other than these in all probability will decline even though there may not be any change in its price. Therefore, for the law of demand to operate it is imperative that prices of other goods do not change.

4. No new substitutes for the commodity

If some new substitutes for a commodity appear in the market, its demand generally declines. This is quite natural, because with the availability of new substitutes some buyers will be attracted towards new products and the demand for the older product will fall even though price remains unchanged. Hence, the law of demand operates only when the market for a commodity is not threatened by new substitutes.

5. Price rise in future should not be expected

If the buyers of a commodity expect that its price will rise in future they raise its demand in response to an initial price rise. This behavior of buyers violates the law of demand. Therefore, for the operation of the law of demand it is necessary that there must not be any expectations of price rise in the future.

6. Advertising expenditure should remain the same

If the advertising expenditure of a firm increases, the consumers may be tempted to buy more of its product. Therefore, the advertising expenditure on the good under consideration is taken to be constant.

2.3.1 Exceptions to the Law of Demand

Q10. Explain the exceptions of law of demand.

Ans : **(Dec.-18, Dec.-16)**

The law of demand does not apply in every case and situation. The circumstances when the law of demand becomes ineffective are known as exceptions of the law. Some of these important exceptions are as under.

1. Giffen Goods

Some special varieties of inferior goods are termed as Giffen goods. Cheaper varieties of this category like bajra, cheaper vegetable like potato come under this category. Sir Robert Giffen or Ireland first observed that people used to spend more their income on inferior goods like potato and less of their income on meat. But potatoes constitute their staple food. When the price of potato increased, after purchasing potato they did not have so many surpluses to buy meat. So the rise in price of potato compelled people to buy more potato and thus raised the demand for potato. This is against the law of demand. This is also known as Giffen paradox.

2. Conspicuous Consumption

This exception to the law of demand is associated with the doctrine propounded by Thorsten Veblen. A few goods like diamonds etc., are purchased by the rich and wealthy sections of the society. The prices of these goods are so high that they are beyond the reach of the common man. The higher the price of the diamond the higher the prestige value of it. So when price of these goods falls, the consumers think that the prestige value of these goods comes down. So quantity demanded of these goods falls with fall in their price. So the law of demand does not hold good here.

3. Conspicuous Necessities

Certain things become the necessities of modern life. So we have to purchase them despite their high price. The demand for T.V. Sets, automobiles and refrigerators etc. has not gone down in spite of the increase in their price. These things have become the symbol of status. So they are purchased despite their rising price. These can be termed as "U" sector goods.

4. Ignorance

A consumer's ignorance is another factor that at times induces him to purchase more of the commodity at a higher price. This is especially so when the consumer is haunted by the phobia that a high-priced commodity is better in quality than a low-priced one.

5. Emergencies

Emergencies like war, famine etc. negate the operation of the law of demand. At such times, households behave in an abnormal way. Households accentuate scarcities and induce further price rises by making increased purchases even at higher prices during such periods. During depression, on the other hand, no fall in price is a sufficient inducement for consumers to demand more.

6. Future Changes in Prices

Households also act speculators. When the prices are rising households tend to purchase large quantities of the commodity out of the apprehension that prices may still go up. When prices are expected to fall further, they wait to buy goods in future at still lower prices. So quantity demanded falls when prices are falling.

7. Change in Fashion

A change in fashion and tastes affects the market for a commodity. When a broad toe shoe replaces a narrow toe, no amount of reduction in the price of the latter is sufficient to clear the stocks. Broad toe on the other hand, will have more customers even though its price may be going up. The law of demand becomes ineffective.

2.4 Elasticity of Demand

Q11. What do you understand by elasticity of Demand?

Ans : **(Dec.-20, May-19)**

The law of demand simply explains the inverse relationship between price and quantity demanded. It doesn't specify how much more is purchased when price falls and how much less is purchased when price rises. In order to understand the rate of change in price and consequent changes in demand, elasticity of demand concept is used.

Elasticity is one of the most important concepts in necoclassical economic theory. It is useful in understanding the incidence of indirect taxation, marginal concepts as they relate to the theory of the firm and distribution of wealth and different types of goods. Elasticity is also crucially important in any discussion of welfare distribution, in particular consumer surplus, producer surplus or government surplus.

Meaning

Elasticity of demand is the responsiveness of demand for a commodity to changes in its determinants.

$$\text{Elasticity of Demand} = \frac{\text{Percentage change in quantity demanded of commodity}}{\text{Percentage change in its price}}$$

Definitions

(i) According to In the words of Dr. Marshall, "Elasticity of Demand may be defined as the percentage change in the quantity demanded divided by the percentage change in the price."

(ii) According to Boulding, "Price elasticity of demand measures the responsiveness of the quantity demanded to the change in price."

(iii) According to In the words of Dooley, "The price elasticity of demand measures the responsiveness of the quantity demanded to a change in its price."

(iii) According to Antol Murad, "Elasticity of demand is the ratio of relative change in quantity to relative change in price."

Thus, price elasticity of demand is a device to measure the rate of change in the quantity of a product demanded in response to a small change in its price.

2.4.1 Types of Elasticity of Demand

Q12. Explain different types of elasticity of demand.

Ans :

After knowing what is demand and what is law of demand, we can now come to elasticity of demand. Law of demand will tell you the direction i.e. it tells you which way the demand goes when the price changes. But the elasticity of demand tells you how much the demand will change with the change in price to demand to the change in any factor.

1. Price Elasticity of Demand
2. Income Elasticity of Demand
3. Cross Elasticity of Demand
4. Advertisement Elasticity of Demand

Q13. What is price elasticity of demand? Explain different types of price elasticity of Demand?

Ans : **(Dec.-20, Dec.-18)**

Price elasticity of demand is the measure of responsiveness of quantity demanded of a commodity to change in price along a given demand curve. In other words, it can be defined as the extent of response of demand for a commodity to a given change in price, with other demand determinants being constant. Also, it is defined as the ratio of relative change in demand and price variables. That means, it is the ratio of proportionate change in the quantity demanded of a commodity to proportionate challenge in its price mathematically, it can be represented as,

$$\varepsilon_p = \frac{\text{Proportionate change in the quantity demanded of a commodity}}{\text{Proportionate change in the price of the commodity}}$$

$$\varepsilon_p = \frac{\Delta Q / Q_i}{\Delta P / P_1}$$

$$\therefore \quad \varepsilon_p = \frac{\Delta P}{\Delta Q} \cdot \frac{Q_1}{P_1}$$

where,

ε_p – Price elasticity of demand

Δ_Q – Proportionate change in the quantity demanded

Q_1 – Initial quantity demanded/quantity demanded at the original price/quantity demanded before any change in price.

P_1 – Initial/original price

Δ_P – Proportionate change in the price of the commodity.

The above equation can also be written as,

$$\varepsilon_p = \frac{(Q_2 - Q_1)}{(P_2 - P_1)/P_1} = \frac{Q_2 - Q_1}{P_2 - P_1} \cdot \frac{P_1}{Q_1}$$

Where,

Q_2 – New quantity demanded

P_2 – New price

Consider a demand schedule of,

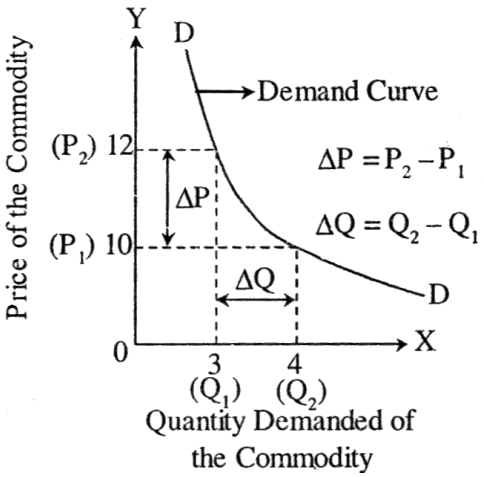
Price of the commodity (P)	Quantity demanded (Q)
10 (P_1)	4 (Q_1)
12 (P_2)	3 (Q_2)

$$\varepsilon_p = \frac{(3-4)}{(12-10)/10} = \frac{-1}{2} \cdot \frac{10}{4} = -1.25$$

$\therefore$ Price elasticity of above demand schedule is $\varepsilon_p = -1.25$.

As the elasticity of demand is linked with the law of demand, therefore the coefficient of price elasticity of demand (e) will always have a negative sign indicating the negative or the downward sloping of a demand curve. To avoid confusion in interpretation, the negative sign is ignored and only the absolute value is considered.

The demand curve of the above schedule is as follows,



Types of Price Elasticity of Demands :

a) Perfectly Elastic Demand

b) Perfectly Inelastic Demand

c) Relatively Elastic Demand

d) Relatively Inelastic Demand

e) Unity Elasticity Demand

(a) Perfectly Elastic Demand

When any quantity can be sold at given price, and when there is no need to reduce price, the demand is said to be *perfectly elastic*. In such cases, even a small increase in price will lead to complete fall in demand. This is illustrated in fig. below.

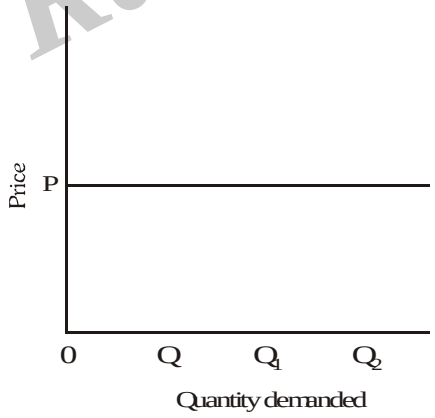


Figure : Perfectly Elastic Demand

(b) Perfectly Inelastic Demand

When a significant degree of change in price leads to little or no change in the quantity demanded, then the elasticity is said to be perfectly inelastic.

In other words, the demand is said to be perfectly inelastic when there is no change in the quantity demanded even though there is a big change (increase or decrease) in price.

Figure below reveals that there is no change in the quantity demanded though there is change in price, say increase or decrease. In other words, despite the increase in price from OP to OP_1, the quantity demanded has not fallen down. Similarly, though there is a fall in the price from OP_3 to OP_2, the quantity demanded remains unchanged.

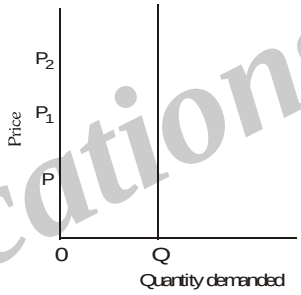


Figure : Perfectly Inelastic Demand

The concepts of perfectly elastic and perfectly inelastic demand do not manifest in real life.

(c) Relatively Elastic Demand

The demand is said to be relatively elastic when the change in demand is more than the change in price. Figure below reveals that the quantity demanded increases from OQ_1 to OQ_2 because of a decrease in price from OP_1 to OP_2. The extent of increase in the quantity demanded is greater than the extent of fall in the price.

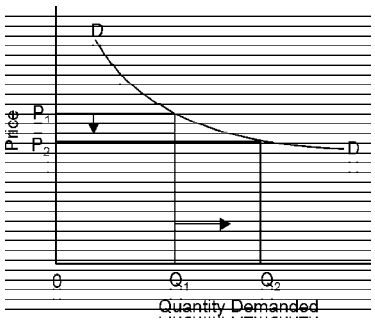


Figure : Relatively Elastic Demand

(d) Relatively Inelastic Demand

The demand is said to be relatively inelastic when the change in demand is less than the change in the price. This is illustrated in fig. below.

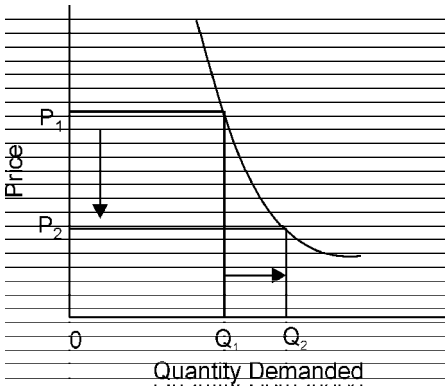


Figure : Relatively Inelastic Demand

Figure above reveals that the quantity demanded increases from OQ1 to OQ2 because of a degree in price from OP1 to OP2. The extent of increase in the quantity demanded is lesser than the extent of fall in the price.

(e) Unity Elasticity Demand

The elasticity in demand is said to be unity when the change in demand is equal to the change in price. This is illustrated in fig. below.

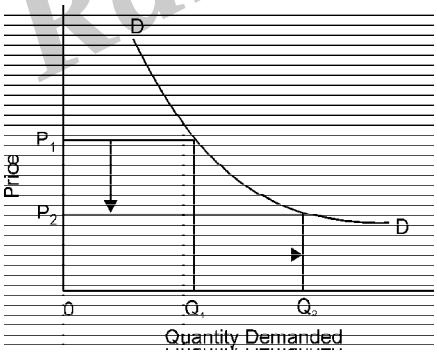


Fig.: Unity Elasticity

Figure above reveals that the quantity demanded increases from OQ_1 to OQ_2 because of a decrease in price from OP_1 to OP_2. The extent of increase in the quantity demanded is equal to the extent of fall in the price.

Q14. Discuss the role of price elasticity of demand in managerial decision.

Ans :

The concept of price elasticity of demand has important practical applications in managerial decision-making. A business man has often to consider whether a lowering of price will lead to an increase in the demand for his product, and if so, to what extent and whether his profits would increase as a result thereof. Here the concept of elasticity of demand becomes crucial.

Knowledge of the nature of the elasticity of demand for his products will help a business to decide whether he should cut his price in a particular case. Such knowledge would also help a businessman to determine whether and to what extent the increase in costs could be passed on to the consumer. In general for items those whose demand is elastic it will pay him to charge relatively low prices, while on those whose demand is elastic, it would be better off with a higher price. A monopolist would not be able to increase his price if the demand for his product is elastic.

In practice, an accurate estimate of the probable response of volume of sales to price changes is extremely difficult. Moreover, the cost of the statistical analysis required may in some cases, exceed the benefit especially when uncertainty is great or when the volume is too small to provide a reason also return on the amount spend on research. The subjective judgment of certain managers, beyond on years of experience, sometimes exceeds in accuracy the best of the present statistical techniques. Uses of price elasticity can be point out as below:

1. Price distribution

A monopolist adopts a price discrimination policy only when the elasticity of demand of different consumers or sub-markets is different. Consumers whose demand is inelastic can be charged a higher price than those with more elastic demand.

2. Public utility pricing

In case of public utilities which are run as monopoly undertakings e.g. elasticity of water supply railways postal services, price

discrimination is generally practiced, charging higher prices from consumers or users with inelastic demand and lower prices in case of elastic demand.

3. Joint supply

Certain goods, being products of the same process are jointly supplied, e.g. wool and mutton. Here if the demand for wool is inelastic compared to the demand for mutton, a higher price for wool can be charged with advantage.

4. Super Markets

Super-markets are a combined set of shops run by a single organization selling a wide range of goods. They are supposed to sell commodities at lower prices than charged by shopkeepers in the bazaar. Hence, price policy adopted is to charge slightly lower price for goods with elastic demand.

5. Use of machine

Workers often oppose use of machines out of fear of unemployment. Machines need not always reduce demand for labor as this depends on price elasticity of demand for the commodity produced. When machines reduce costs and hence price of products, if the products demand is elastic, the demand will go up, production will have to be increased and more workers may be employed for the product is inelastic, machines will lead to unemployment as lower prices will not increase the demand.

6. Factor pricing

The factors having price inelastic demand can obtain a higher price than those with elastic demand. Workers producing products having inelastic demand can easily get their wages raised.

7. International trade

(a) A country benefits from exports of products as have price inelastic demand for a rise in price and elastic demand for a fall in price.

(b) The demand for imports should be inelastic for a fall in price and elastic for a rise in price.

(c) While deciding whether to devalue a country's currency or not, price elasticity of demand for a country's exports would be an important factor to be taken into consideration. If the demand is price elastic, it would lead to an increase in the country's exports and devaluation would fail to achieve its objective.

8. Shifting of tax burden

It is possible for a business to shift a commodity tax in case of inelastic demand to his customers. But if the demand is elastic, he will have to bear the tax burden himself, otherwise demand for his goods will go down sharply.

9. Taxation policy

Government can easily raise tax revenue by taxing commodities which are price inelastic.

Q15. What are the determinants of price elasticity of demand?

Ans :

Determinants of Price Elasticity of Demand

The following are the determinants of price elasticity of demand.

(i) Nature of the Commodity

On the basis of the satisfaction provided by the goods, they are classified into two categories - Luxury goods Comfort goods and necessary goods. Usually, the demand for luxury goods and comfort goods is price elastic, whereas, the demand for necessary goods is price inelastic. For example, the demand for rice, clothes, etc., is inelastic, whereas, the demand for TV, radio, automobiles etc., is elastic.

(ii) Availability of Close Substitutes

The availability of close substitutes for a commodity is the important determinant of price elasticity of demand. If the product has large number of close substitutes under a given price, the demand for that commodity is elastic. If the price of the commodity is increased, consumers buy less of it and buy

of its substitutes. Therefore the demand for that commodity tends to be elastic. If the number of substitutes increase, the demand becomes more price elastic. For example, the demand for cigarette is inelastic as there is no other close substitute for it. But the demand for a particular brand of cigarette is elastic as there are many brands available as substitutes in the same price range.

(iii) Number of Uses of the Commodity

A commodity having large number of uses has high elasticity and the commodity with single use has less elasticity. For example, a commodity like coal having a composite demand, has high elasticity.

(iv) Consumer's Income Level

Larger the income level of the consumer, the demand for overall commodities tends to be relatively inelastic. The demand of a millionaire is less-affected even by significant price changes. Similarly, an increase/decrease in the income level of a low-income consumer may tend to make the demand for commodities relatively elastic.

(v) Durables/Durable Goods and Perishables

The demand for durable goods tends to be inelastic. Examples are furniture, bicycle, radio etc., whereas the demand of perishable goods is relatively elastic. Examples are milk, vegetables, fish etc.

(vi) Habits, Traditions and Customs

Some commodities are demanded due to individual habits, traditions and customs. For such commodities, the demand is less elastic. Examples are cigarettes, alcohol etc.

(vii) Complementary Goods

Commodities that are jointly demand or the complementary goods have less elasticity of demand. Examples are petrol, ink etc.

(viii) Share of the Commodity in Consumer's Income

If a less proportion of consumer's income is spent on the commodity, then the demand tends to be inelastic. The examples of such commodities are salt, match boxes, ink etc. There is no appreciable impact of income variations on these products because the household usually spends an insignificant amount of them.

(ix) Time Distribution

Usually the quantity demanded of a commodity is referred to a specific period. Example is the amount of rice demanded in a week, a month and a year. Longer the time period, greater will be the possibility of substituting the commodity under consideration with a cheaper commodity.

Q16. Define Income elasticity of demand.

Ans : **(Dec.-20)**

Consumer's income is one of the important determinants of demand. Income elasticity of demand is the measure of the extent to which a consumer's demand for a commodity changes as a result of changes in his income. Income elasticity of demand is defined as the ratio of proportionate/ percentage change in the quantity demanded of a commodity to the proportionate/percentage change in the consumer's income. Mathematically, it is represented as,

$$\varepsilon_1 = \frac{\text{Percentage change in the quanity demanded}}{\text{Percentage change in consumer's income}}$$

$$\varepsilon_1 = \frac{\Delta Q / Q_1}{\Delta I / I_1} = \frac{\Delta Q}{\Delta I} \cdot \frac{I_1}{Q_1}$$

Where,

ε_1 = Income elasticity of demand

Δ_Q = Percentage change in the quantity demand.

Q_1 = Initial quantity demanded of a commodity.

Δ_I = Percentage change in the consumer's income

I = Consumer's initial income.

Income elasticity of demand is also given by,

$$\varepsilon_i = \frac{(Q_2 - Q_1)/Q_1}{(I_2 - I_1)/I_1}$$

Where,

Q_2 – New quantity demanded

I_2 – Consumer's new income.

Consider and example as follows,

I_1 = `6,000 Q_1 = 50 units

I_2 = `7,000 Q_2 = 60 units

$$\therefore \varepsilon_i = \frac{(Q_2 - Q_1)/Q_1}{(I_2 - I_1)/I_1}$$

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

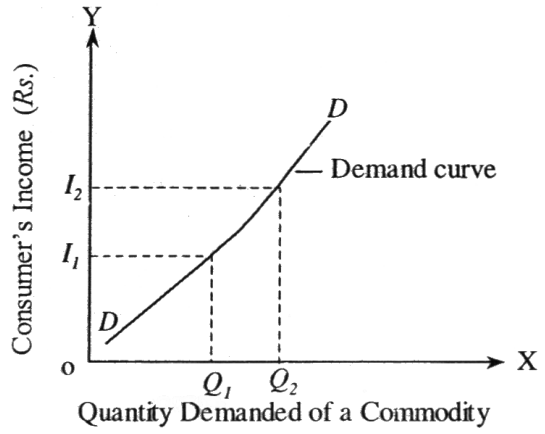
$$= \frac{60 - 50}{7,000 - 6,000} \frac{6,000}{50}$$

$$= \frac{10}{1000} \frac{6,000}{50} = 1.2$$

$\therefore$ Income elasticity ε_i = 1.2.

Income elasticity of demand for normal goods is positive, as the consumer's demand for a commodity goes in the same direction with his income. Whereas, income elasticity for inferior goods is negative as the demand for inferior goods varies inversely with consumer's income.

The demand curve for income elasticity of demand is,



Q17. Discuss various types of income elasticities of demand?

Ans :

Types

Income elasticity of demand is categorized into five types.

(i) High income elasticity of demand

(ii) Unitary income elasticity of demand

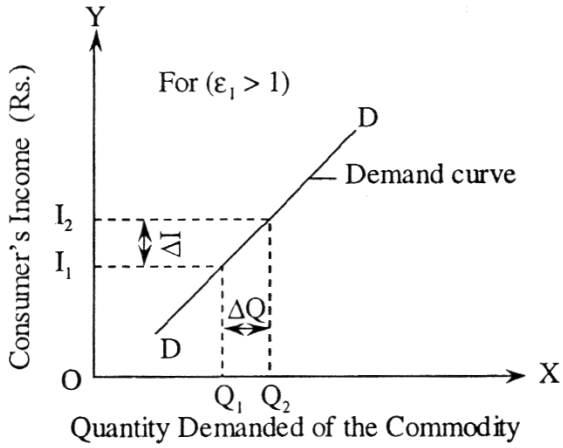
(iii) Low income elasticity of demand

(iv) Zero income elasticity of demand

(v) Negative income elasticity of demand.

(i) High Income Elasticity of Demand

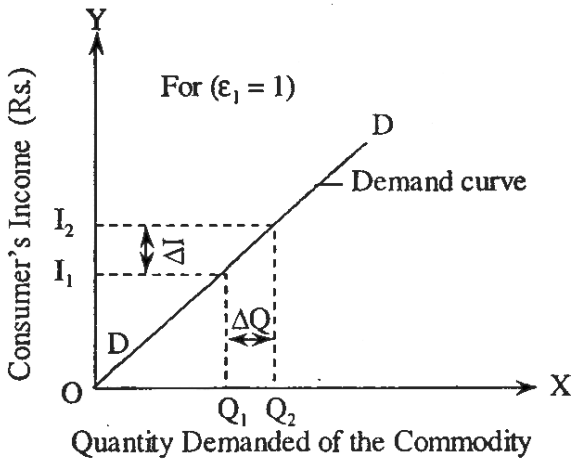
When the percentage change in the quantity demanded of a commodity is greater than the percentage change in the consumer's income, then the income elasticity of demand is high. The elasticity coefficient for high income elasticity is greater than one i.e., (ε_i > 1). The demand curve is as follows,



(ii) Unitary Income Elasticity of Demand

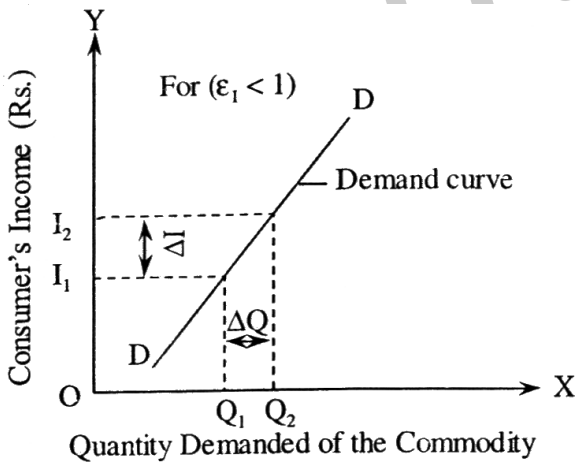
A commodity is said to possess unitary income elasticity of demand, when the percentage change in the quantity demanded of a commodity and the percentage change in the consumer's income are equal. The elasticity coefficient of unitary income elasticity is equal to one i.e.,

(ε_i = 1) and its demand curve is at an angle of 45° as shown below,



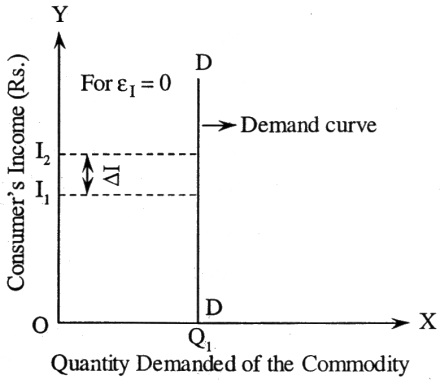
(iii) Low Income Elasticity of Demand

When the percentage change in the quantity demanded of a commodity is less then the percentage change in the consumer's income, it is called as low income elasticity of demand. The elasticity coefficient of low income elasticity is less than one (ε_I < 1) and the demand curve assumes the shane as follows.



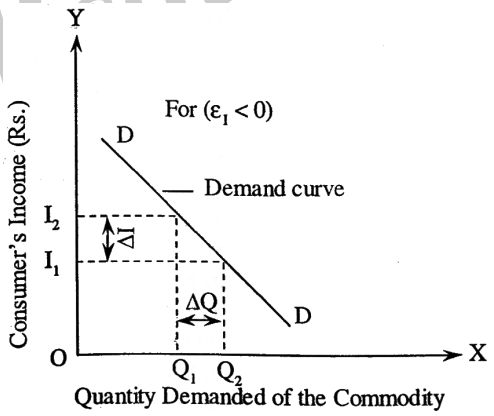
(iv) Zero Income Elasticity of Demand

A commodity is said to have zero income elasticity of demand when a change in consumer's income has no effect on the quantity demanded of a commodity. The elasticity coefficient for zero income elasticity is equal to zero (ε_I = 0). The demand curve is as follows.

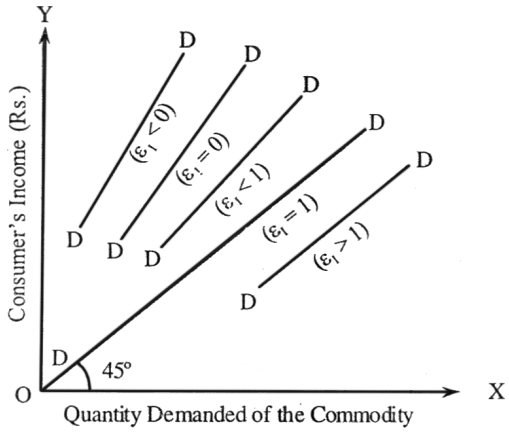


(v) Negative Income Elasticity of Demand

When an increase hi 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. Example is inferior goods have negative income elasticity with elasticity coefficient less than zero (ε_I < 0). The demand curve is,



The figure below depicts all the income elasticities of demand.



Q18. Explain briefly about cross elasticity of demand.

Ans : **(Dec.-20)**

The change sin '1' unit demand and the changes in another unit prices 'functional relation is stated cross elasticity of demand' For ex : If the 'x' for 'y' is a alternate good. So the changes in 'x' unit demand and the changes in 'y' unit prices functional relational is stated cross elasticity of demand. Cross nd = $\frac{\Delta Q}{\Delta YP}$. It can be derived by the following principles cross nd = $\frac{\Delta Qx}{\Delta YP}$

Where,

ΔxQ = Changes in 'x' unit demand

ΔYP = Changes in 'y' unit prices

Further the cross elasticity demand can be classified into '5' types.

(i) Relative Cross Elasticity of Demand : (nd = > 1). The changes in 'x' unit demand is more than to change sin 'y' unit prices is called as greater than 'y' cross elasticity of demand.

(ii) Unitary Cross Elasticity of Demand (nd = 1) : The changes in 'x' unit demand is equal to changes in 'y' unit prices is called as unitary cross elasticity of demand.

(iii) Relative Cross In-elasticity of Demand (nd = <1) : The changes in 'y' unit prices is called as relative cross in-elasticity of demand.

(iv) Perfect Cross Elasticity of Demand (nd = ∞) : The 'x' unit demand is being changes may be either increases (or) decreases but in the 'y' unit price is remain constant is called as perfect cross elasticity of demand.

(v) Perfect Cross inelasticity of demand (nd = 0) : The 'y' unit price is being changes may be either increases (or) decreases but in the 'x' unit demand is remain constant is called as 'zero' cross elasticity demand.

All the above five types of cross elasticity demands can be illustrated here under consolidated diagram.

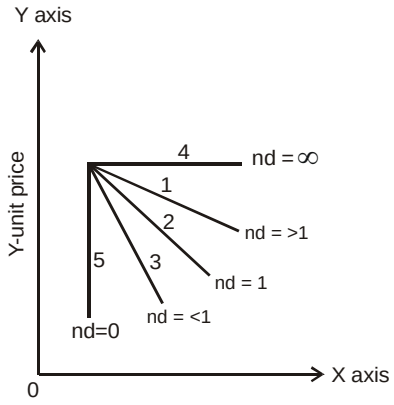


Figure: X - unit demand

In the above diagram, on 'y' axis we are showing 'y' unit prices and on 'x' axis we are showing x-unit demand. The horizontal lines shows perfect cross elasticity of demand and the left to right downward no '1' line shows greater than cross elasticity of demand no '2' line shows equal to one cross elasticty of demand and no. '3' line shows less than cross elasticity of demand.

Q19. Explain briefly about advertisement elasticity of demand.

Ans :

The degree of responsiveness of quantity demanded to the change in the advertisement expense of expenditure.

Ea = Change in quantity demanded × original advertisement expenses

Change in advertisement expenses original quantity demanded

Important

1. Promotional elasticity of demand will be affected, depending on whether it is a new product or the product with a growing market.
2. The amount a competitor reacts to the firm's advertisement.
3. The time interval between the advertisement expensed or expenditure and the unresponsiveness of the sales.
4. The influence of non-advertisement determinants of demands such as trends, price, income etc.

Uses of advertisement elasticity of demands

1. It helps the manager to decide the advertisement expense. If the advertisement is more than one, which means incremental revenue exceeds incremental expenses, then increased expenditure on advertisement can be justified.
2. The fire should observe the saturation point, where advertisement pays nothing or does not help in increasing sales revenue.

Q20. Explain the significance of elasticity of demand.

Ans :

Elasticity of demand is a crucial concept in the spheres of trade, commerce and finance. The following are some of the important advantages of elasticity of demand:

1. Price Determination

The doctrine of elasticity of demand plays a vital role in price determination. The sellers increase prices if the demand is less elastic and lower prices if the demand is elastic.

2. Monopoly Market

For a monopolist to optimize his profits, he must know the elasticity of demand for his products. In other words, the degree of monopoly can be measured with the help of elasticity of demand. A monopolist can perform price discrimination only when he is aware of price elasticity for his commodities. A prudent monopolist increases prices in the inelastic market and lowers prices in the elastic market. In addition, the concept of price elasticity of demand plays a vital role in dumping practice as well.

Example

Oil producing countries tend to increase price by cutting down oil production. When the oil production is reduced, an artificial scarcity is created; consequently, the price is increased. This is possible as long as the oil products are price inelastic.

3. Pricing Public Utilities

Many of the public utilities are necessities. For instance, supply of water, electricity, transport and so on is essential for our everyday activities. Therefore, the demand for these utilities is price inelastic. The concept of elasticity of demand helps the government to rationalize prices for these important utilities. Otherwise, prices for these utilities will be very high, if they are provided by private entities.

4. Prosperity Versus Poverty

Do you agree that even an overwhelming prosperity can cause poverty? It is true in some special cases. One of such special cases is bumper crop. In agriculture when there is bumper crop, the price of the commodity falls because of excessive supply. In this case, if the demand for the commodity is inelastic, it may create disaster because, the farmers will get very low prices for their goods. Therefore, not all properties may alleviate poverty. This scenario can be studied well with the help of the concept of elasticity of demand.

5. Currency Devaluation

The application of elasticity of demand can be extended to the analysis of currency devaluation. Devaluation helps to increase exports. It is possible only when the demand for exported goods is highly elastic. If the demand is inelastic, there will not be any use in currency devaluation.

6. Taxation

Suppose you are the finance minister of your country. On which commodities you levy taxes – the one that is price elastic or the one that is price inelastic? Obviously, you have to choose the commodities that are price inelastic. The reason is that if the commodities are price elastic, the demand will come down drastically when their prices increase. Taxes increase the price of the commodities. If the demand falls, revenue also will fall. Because of this reason, you have to choose those commodities that are price inelastic.

7. Wage Determination

The idea of elasticity of demand helps to wage determination. You know that wages of laborers are closely associated with the price of products they produce. What is the way to determine the right price that gives maximum profits? The concept of elasticity of demand answers this question. Once the right price is determined, the profit will be maximized. Subsequently, wages of laborers can also be determined.

Q21. What are the various methods of measurement of elasticity of demand?

Ans :

The proportionate changes in quantity of demand and the proportionate changes prices of commodity functional relation is called price elasticity of demand. It can be derived the following equation.

$$\therefore \quad \boxed{\eta d = \frac{\Delta Q}{\Delta P}}$$

$\therefore$ ηd = Demand elasticity

ΔQ = Changes in quantity of demand

ΔP = Changes in prices of commodity

There are three types methods are available for estimating the elasticity of demand. They are

1) Total expenditure method

2) Point method

3) Arc method

1. Total Expenditure Method

It has been proposed by "Marshall based on price of commodity, quantity of unit and total expenditure base, he can analyse to estimated greater than 1, equal to 1, less than –1 elasticities of demand is being determined it can illustrated here under schedule.

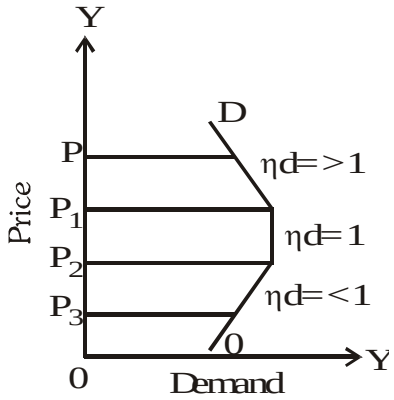
Schedule

Price	Qty	Total expenditure	Determinants of yd
10	100	1000	} Relative price yd = >1%
9	120	1080	
8	140	1120	} Oxitary price yd = 1
7	160	1120	
6	180	1080	} Relative price in yd = <1
5	200	1000	

In the above schedule if the price at Rs.10/- the purchased units are 100/- and the incurring total expenditure is 1000 rupees, if the price is comedown at Rs. 9/- the purchased units are raised at 120 units in order to incurred the total expenditure 1080 rupees which is more than to previous expenditure. Therefore it is equalent to greater than 1 price elasticity of demand.

If the price is at Rs. 18/- the purchased units are 140 and the incurring total expenditure is 1120 rupees, if the price is comedown at Rs. 7/- the purchased units are raised at 160 units in order to incurred the total expenditure 1120 rupees which remains constant. Therefore it is equalent to price elasticity of demand.

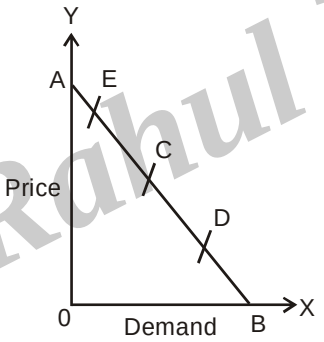
If the price is at rupees 6/- the purchased units. So units in order to incurred the total expenditure is 1080 is the price is comedown at Rs. 5/- the purchased units are raised 200 units in order to incurred. The total expenditure. Therefore it is equalent less than/price elasticity of demand. Based on the schedule we can illustrated here under diagram.



In the above diagram on y axis we are showing a price and on x-axis quantity of demand, the changes of prices OP to P_1 shows greater than 1 elasticity of demand, the changes of prices of P_1 to P_2 shows equal to 1 price elasticity of demand and the changes of price P_2 to P_3 shows less than 1 elasticity of demand.

2. Point Method

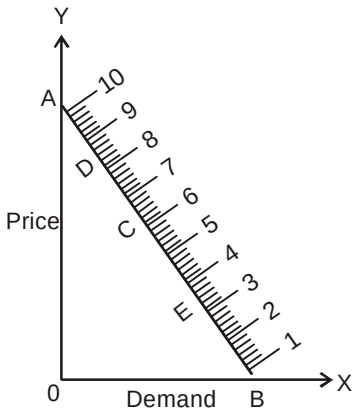
Based on this method on any point of the demand line we can trace out the nature of elasticity of demand it, can illustrated here under example :



On the above diagram the left to right downwards a and b and the demand line, and a, b demand line are plotted a, e, c, d, b points are mentioned in respective point the nature of elasticity of demand can we trace out with the help of point method.

Let we know that a, b demand line length gpr.

Example, If the a, b demand line length is above 10 centimeters. Let us assume based on it we can fixed here under a scale of demand line.



Q22. Explain the managerial applications of elasticity of demand.

Ans :

1. Price Discrimination

A monopolist adopts a price discrimination policy only when the elasticity of demand of different consumers or sub-markets is different. Consumers whose demand in inelastic can be charged a higher price than those with more elastic demand.

2. Public Utility Pricing

In case of public utilities which are run as monopoly undertakings, e.g., electricity, water supply, railways, postal services, price discrimination is generally practiced, charging higher prices from consumers, or users with inelastic demand and lower prices in case of elastic demand.

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adopted is to charge slightly lower price for goods with elastic demand.

5. Use of Machines

Workers often oppose use of machines out of fear of unemployment. Machines need not always reduce demand for labor as this depends on price elasticity of demand for the commodity produced.

When machines reduce costs and hence price of products, if the product's demand in elastic, the demand will go up, production will have to be increased and more workers maybe employed.

On the contrary, if demand for the product is inelastic, machines will lead to unemployment as lower prices (due to lesser costs) will not increase the demand.

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The factors having price-inelastic demand can obtain a higher price than those with elastic demand. Workers producing products having inelastic demand can easily get their wages raised.

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i) A country benefits from exports of products as have price-inelastic demand for a rise in price and elastic demand for a fall in price.

ii) The demand for imports should be inelastic for a fall in price and elastic for a rise in price.

iii) While deciding whether the devalue a country's currency or not, price elasticity of demand for a country's exports would be an important factor to be taken into consideration.

If the demand is price-elastic, it would lead to an increase in the country' exports and devaluation would be worthwhile. If the demands is price inelastic, devaluation would fail to achieve its objective.

For example, the demand for agricultural products is rather price inelastic and devaluation of a country's products is rather price inelastic and devaluation of a country's currency would not lead to any significant increase in their exports.

8. Shifting of Tax Burden

It is possible for a business to shift a commodity tax in case of inelastic demand to his customers. But if the demand in elastic, he will haves to bear the tax burden himself otherwise demand for his goods will go down sharply.

9. Taxation Policy

Government can easily raise tax revenue by taxing commodities which are price-inelastic.

Q23. What are the factors effect the elasticity of the demand.

Ans :

(a) Nature of product

Based on their nature, the products and services are classified into necessities, comforts and luxuries. Necessaries imply the absolute or basic necessities such a food, clothing, housing. Comforts refer to TV, refrigerator and so on. By luxuries, we mean sofa sets marble flooring in a houses and such others.

The meaning and definition of these necessities, luxuries and comforts change from person to person, time to time and place to place. For example, a scooter may be a comfort or luxury for a student but when he does a part-time job, it may be a necessity for him.

The nature of product has a significant impact on the elasticity of demand. For instance, if there is an increase in the price of rice, we still buy it because it is a necessity for us. This means that the demand is inelastic to price. Though there is an increase in price, we tend to buy the necessaries such as petrol, diesel and so on.

(b) Time frame

The more the time available for the customer, the demand for a particular product may be elastic and vice versa. Take the case of vegetables. When you do not have time, you

go to a nearby shop and buy whatever you want at the given price. Had you had little free time, you would have preferred to get the same from a vegetable market at lesser price.

(c) Degree of postponement

Where the product consumption can be postponed, the product is said to have elastic demand and where it cannot be postponed, it is said to have inelastic demand. The consumption of necessaries cannot b postponed and hence they have inelastic demand.

(d) Number of alternatives uses

If the number of alternatives uses are more, the demand is said to be highly inelastic and vice versa. Take the case of power or electricity. It is used for a number of alternative uses such as running of machines in industries, offices, households, trains, and so on.

(e) Tastes and preferences of the consumer

Where the customer is particular about his taste and preferences, the product is said to be inelastic. For the customer who are particular or loyal to certain brands such as Colgate, Tata Tea, Annapurna Atta, and so on, price increases do not matter. They tend to buy that brand inspite of the price changes.

(f) Availability of close substitutes

Where there are a good number of close substitutes, the demand is said to be elastic and vice versa. For gold, there is no close and literal substitute and hence the demand for gold in inelastic. If coffee and tea are equally good for me, if there is an increase in price of coffee, I may be prepared to pay higher price for coffee.

(g) In case of complementaries or joint goods

In case of complementaries or goods having joint demand, the elasticity is comparatively low.

(h) Leave of prices

If the price is very expensive (such a diamonds) or very cheap (such as salt) then the product is likely to have an elastic demand. If the price is too high, a fall in it will not increase the demand much. The demand of the relatively poor people is more sensitive to price changes. In order to derive maximum satisfaction from their limited income, then try to plan their purchase in response to changes in prices. The rich may not bother about price changes.

(i) Availability of subsidies

Subsidy refers to money paid by a government or other public authority in order to help a company financially or to make something cheaper for the public. There is need for subsidies in case of goods with inelastic demand such as LPG, sugar, wheat and so on.

(j) Expectation of prices

Where people expect a fall in the price, the demand for the product is likely to be inelastic.

(k) Durability of the product

Where the product is durable in case of consumer durables such as TV, the demand is elastic. In the case of perishable goods such as milk, the demand is inelastic.

(l) Government policy

Where the government policy is liberal, the product is likely to have elastic demand and vice versa. Government, in the interest of the lower income group consumers, closely monitors the prices of certain products (such as, ration goods as sold in fair price shops are likely to have inelastic demand). Also, another example could be taxes. Government can raise tax collections with a little reduction in the tax rates.

2.4.2 Uses of Demand Elasticity

Q24. Discuss the role of demand elasticity.

Ans :

"Elasticity of demand is the rate at which the quantity demanded changes with a change in price."

In other words we can say that elasticity of demand is the relationship between the proportionate change in price and the proportionate change in quantity demanded.

Formula

ED = Proportionate change in quantity demanded/Proportionate change in price.

Practical Importance of Elasticity of Demand

This concept has a great practical importance in the sphere of government finance and in the commerce and trade due to the following reasons :

1. Importance for Finance Minister

Before imposing the taxes finance minister has to keep in view the elasticity of demand of various goods. If the demand is inelastic, he can increases the tax and thus can collect large revenue.

2. Importance for the Monopolist

If the monopolist finds that the demand for his product is inelastic, he will fix the price at a higher level, otherwise he will lower the price.

3. Fixation of Wages

If a demand of labour is inelastic, it is easy to rise their wages otherwise not.

4. International Trade

If the demand of commodity is inelastic then heavy duties can be imposed on its import heavy duties can be imposed on its import and export.

5. Importance of for the Producer

Producer will study elasticity of demand before fixing the price of his commodities. Secondly, If the demand for a commodity is inelastic the producer will spend a large amount on advertisement for increasing the sale.

6. Rate of Foreign Exchange

The rate of foreign exchange is also considered on the elasticity of exports and imports of the country.

7. Terms of Trade

The terms of trade between two countries are based on the elasticity of demand of the traded goods.

8. Importance for the Businessman

When the demand of good is elastic , businessman increase his sale by lowing the price. If the demand is elastic then he fixes high prices.

9. Joint Product Cost Problem

Sometimes it is very difficult to know the separate cost of each factor of joint products. Here elasticity of demand becomes very helpful in determining the cost of each factor of production.

10. Importance for Communication Industry

The concept of elasticity is practically used in fixing the rates and fares of transfer of goods.

11. Law of Increasing Return and Demand

When small industry is working under the law of increasing return, its demand should be elastic. So it will lower the price and increase the sale.

Q25. Define Demand Forecasting. What are the factors determining Demand Forecasting?

Ans :

Meaning

Demand forecasting refers to an estimation of future demand for the product under given conditions.

Demand forecasting is predicting future demand for the product. It is the estimation of the value of a variable (or set of variables) to some future point in time.

Demand forecasting is the estimation of level of demand (amount or quantity) to be expected for goods or services for some period of time in future.

Definition

(i) According to Evan J Donglas, "Demand forecasting may be defined as the process of finding values for demand in future time period".

Thus, demand forecasting means, when, how, where and how much will be the demand for a product or service in the near future.

Factors

The following are the factors determining demand forecasting,

1. Period of Forecasting

Demand forecasting may be short-term or long-term,

(i) Short-Run : A short-term demand may cover a period of three months, six months or one year but not exceeding one year.

(ii) Long-Run : Long-term forecasting covers a period exceeding 5 years.

A business should forecast short-term as well as long-term sales/demand for its products to have a clear view of business activities. An alternative method may be to associate the long-term and short-term forecasting with certain types of decisions.

2. Demand Forecasting Level

Demand forecasting may be undertaken at three different levels,

(i) Industry Level : This includes the preparation of sales forecasts by different trade association.

(ii) Firm Level : This includes the estimation of demand for the products which was offered by a individual firm. Individual firms forecasts their sales.

(iii) Macro-Level : It is concerned with business conditions over the whole economy measured by an approximate index of industrial production, national income or expenditure. This kind of external data cover the basic assumptions on which the business must have a base for its forecasts.

3. Products are to be Classified

Products are classified into capital goods and consumer durable or non-durable goods and services. There are distinctive patterns of. demand for different categories of the products.

4. Forecasts of Established Products or New Products

As for as the new products are concerned, methods and problems for forecasting are quite different from products already established in the market as sales trends are know better and the competitive nature is well known. Thus, the methods and problems should be studied accordingly.

5. Degree of Orientation

Demand forecasts has break down into two forecasts they are,

(i) General Forecast : General forecasts are resulted with the total sales in the given period of time.

(ii) Specific Forecast : Specific forecasts are those which resulted will be product/ service-wise or region or customer segment-wise forecasting sales within a given period of time.

6. Other Factors

There are other factors which influence the demand forecasting are,

i) Political developments.

ii) Technology changes.

iii) Price level or inflation changes)

Q26. What are the characteristics of good Demand Forecasting ?

Ans :

According to **Joel Dean** following are the suggested criteria characteristics for selecting a suitable method of forecasting,

1. Accuracy

It is important to check the past forecast against the present performance and of present forecast against future. The accuracy

of the forecast is considered good if the forecasting result gives appropriate output.

2. Simplicity

Every forecasting method should be simple, reliable and consistent with the existing knowledge. A simple method is more understandable than the complicated one.

3. Economy

It should involve lesser costs as far as possible. Its costs must be compared against the benefits of forecasts.

4. Availability

Immediate availability of required data is of vital importance to business. The technique which is used should give quick results and useful information.

5. Plausibility

The techniques which are used and the assumptions made should be intelligible to the management. It is essential for a correct interpretation of the results.

6. Effective

It is quite easy to judge the trends. But for a forecasting it is necessary to predict deviation and turning for an effective forecasting.

7. Durability

Durability of forecast depends upon the responsiveness and simplicity of the functional filled.

8. Quickness

It should yield quick results. If it is time consuming, it may delay the decision-making process.

Q27. Describe the methods of demand forecasting for established products.

Ans : **(Dec.-19)**

1. Survey Method

(a) Survey of Buyers' Intentions: To anticipate what buyers are likely to do under a given set of circumstances, a most useful source of information would be the buyers themselves. It is better to draw a list of all potential buyers, approach each buyer to ask how much does he plans to buy of the given product at a given point of time under particular conditions. This is the most effective method because the buyer is the ultimate decision-maker and we are collecting the information directly from him.

(b) Sales Force Opinions: Another source of getting reliable information about the possible level of sales or demand for a given product or service is the group of people who sell the same. Thus, we can control the limitations of cost and delays in contacting the customers.

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 marketing strategy. It is less costly as the survey can be conducted instantaneously through telephone, fax or video-conferencing, and so on. The data, thus collected, forms another valid source of reliable information.

2. Statistical Methods

(a) Trend Projection Methods: These are generally based on analysis of past sales patterns. These methods dispense with the need for costly market research because the necessary information is often already available in company files interms of different time periods, that is, a time series data. There are five main techniques of mechanical extrapolation. In extrapolation, it is assumed that existing trend will maintain all through.

(b) Barometric Techniques: Where forecasting based on time series analysis or extrapolation may not yield significant results, barometric techniques can be made use of. 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 a barometer) of future demand.

(c) Simultaneous Equation Method: In this method, all variables are simultaneously considered, with the conviction that every variable influences the other variables in an economic environment. Hence, the set of equations equal the number of dependent (controllable) variable which is also called endogenous variables. In other words, it is a system of 'n' equations with 'n' unknowns. It can be solved, the moment the model is specified because it covers all the unknown variables, it is also called complete systems approach to demand forecasting.

3. Other Methods

(a) Expert Opinion: Well-informed persons are called experts. Experts constitute yet another source of information. These persons are generally the outside experts and they do not have any vested 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 learn 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 to 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. Regression equation can be built upon these price-quantity relationships of different markets. This method can not provide better results, unless these markets are homogeneous in terms of, tastes and preferences of the customers, their income and so on.

(d) Judgemental Approach: When none of the above methods are directly related to the given product or service, the management has no alternative other than using its own judgement.

2.5 Concept of Supply

Q28. What do you understand by supply.

Ans : **(May-18)**

Supply of a commodity is the amount of its which the sellers are able and willing to offer for sale at a price during a certain period of time. Supply is a relative term - related to price and time. Market supply means the total quantity of a commodity that all the firms are willing to sell at a given during a given time period. It is found by adding the supply of the firms selling the commodity.

Supply analysis can be used to determine the impact of changes in product and factor prices, in technology, and in access on factor demands (including labor), production, marketed output, aggregate supply, and incomes. Generally, it can be used to analyze the impact on production of the

removal of barriers to access or other changes in markets. Supply analysis, in the employment context, deals with key staffing questions related to current staffing levels in an organization.

Definitions

(i) **According to Thomas** Supply of goods is the quantity offered for sale in a given market at a given time at various prices.

(ii) **According to Samuelson** Supply refers to the amounts of a good that producer in a given market in a given market desired to sell, during a given time period at various prices, Ceteris Paribus.

Q29. What do you understand by supply schedule.

Ans :

Supply schedule is the tabular relationship between the supply of a commodity at different prices over a given period of time. Supply schedule is a series of quantities which producer would like to sell per unit of time at different prices. Two aspects of Supply Schedule.

a) Individual Supply Schedule

b) Market Supply Schedule

(a) **Individual Supply Schedule :** Individual Supply Schedule is defined as a table which shows quantities of a given commodity which an individual producer will sell at all possible prices at a given time.

Price (Rs.) (per Kg)	Quantity Supplied (Kg)
1	10
2	30
3	50
4	70
5	80

(b) **Market Supply Schedule:** Market demand schedule is defined as the quantities of a given commodity which all producers will sell at all possible prices at a given moment of time. In market there are many producers of a single commodity. By aggregating the individual supply, the market supply schedule is constructed.

Price of Commodity 'X' (in Rs.)	Supply by A	Supply by B	Market Supply (Units)
100	40	50	40 + 50 = 90
200	60	70	60 +70 = 120
300	65	80	65 + 80 = 145
400	80	100	80 + 100 = 180

The above table include indicates that when price of X is Rs. 100 per unit, A's supply is of 40 unit and that of B is of 50 units. Thus the market supply is 90 units. As the price increases, quantity supplied increases.

Q30. Define supply function.

Ans :

The mathematical function explaining the quantity supplied in terms of its various determinants, including price; thus the algebraic representation of the supply curve.

Mathematical or functional relationship between supply and its determinants is called supply function. It is a given as :

$Q_x = f(P_x, C_x, T_x)$

Where,

Q_x = Supply of Commodity X

P_X = Price of Commodity X

C_x = Cost of Production of Commodity X

T_x = Technology of its Production.

2.5.1 Determinants of Supply

Q31. Explain the factors determining the supply?

Ans :

Supply of a commodity by a firm is generally not a fixed quantity. It keeps on changing. The factors that effect the supply of a commodity are :

1. Price of the Commodity
2. Other Factors
   a) Prices of other Commodities
   b) Prices of Factors of Production
   c) Objective of the Producer
   d) Production Technology

1. Price of the Commodity

While studying the effects of changes in the price of a commodity on its supply, we assume that no other factor is affecting the supply of the commodity. When other things are constant, a rise in the price of a commodity provides an incentive to its seller to sell more of it as it fetches more profits and a fall in the price is a disincentive to the seller as his profits.

2. Other Factors

While studying the effects of changes in the price of a commodity on it supply we assume that other factors that can affect supply remain constant. We assume that the price of a commodity does not change.

(a) Prices of other Commodities: If the prices of other commodities increase, it becomes more profitable for a firm to produce these other commodities. So it will shift its resources from the production of the commodity whose price has not changed to the production of the commodities whose price have increases.

(b) Prices of Factors of Production: I f the cost of production of a commodity rises due to a rise in the price of any one or more of its factors of production, and price of the commodity remaining the same then the margin of profit of its producers will fall. They will reduce the supply of the commodity through its price has not changed. Similarly a fall in the price of factors of production will increase the supply of a commodity.

(c) Objective of the Producer: The objective of a producer of a commodity is to earn maximum profits. So he producer that much of a commodity which will fetch him maximum profits. It is possible that a producer may be interested in maximizing his sales rather than his profits. The producer goes on increasing the production and sales so long as his target of profit is not adversely affected. Therefore, the objective of a producer also affects the supply of the commodity.

(d) Production Technology: Technological advancement means introduction of new machines and better methods of production. This reduces the cost of production and increases profit. So the producer is able to supply more of the commodity at the same price. Thus improvement in technology increases the supply of a commodity. Price remaining the same.

2.5.2 The Law of Supply

Q32. What do you understand by law of supply? Explain the assumptions and exceptions of law of supply.

Ans : **(Dec.-17)**

The direct relationship between the price of a commodity and its supply is stated in the form of a law called Law of Supply. The law of supply states that "Other things remaining unchanged, the supply of a commodity expands with a rise in price and contracts with a fall in price." The market supply curve is a diagrammatic representation of the law of supply. Law of supply states the relationship between the price and the supply of a commodity. Price of the commodity affects its supply.

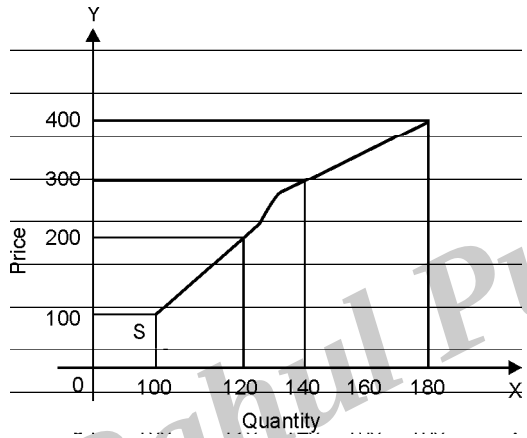


Figure: Market Supply Curve

Assumptions

The law of supply is conditional, as it is defined under the assumption, "other things being constant". The law of supply depends on the following ceteris paribus assumptions,

1. Cost of Production is Constant

Law of supply assumes that the price of the product varies even though there is no change in the cost of production. If the cost of production increases with an increase in the price of the product then it is not beneficial for the sellers to produce more and supply more. Hence, the law of supply is valid only if there is no change in the cost of production. It signifies that, the factors like prices, wages, interest, rent, etc., remains constant.

2. Technique of Production is Unchanged

Law of supply assumes that, there is no change in the technique of production. It is necessary for the cost to remain constant. If the improvement in the, techniques reduces the cost of production, then the seller will supply more even if the price falls.

3. Fixed Scale of Production

During a specified period of time, the scale production is assumed to be constant. If the scale of production changes then the level of supply automatically changes regardless of changes in the price of the product.

4. Government Policies are Constant

It is assumed that government policies such as, taxation policy, trade policy, etc., remains constant. For example, if there is an increase in the excise duty or if quotas are fixed on raw materials then it is not appropriate to expand the supply with an increase in prices.

5. Transport Costs remain Unchanged

Transport facilities and transport costs are assumed to remain constant. If the reduction in transportation cost reduces the cost of production then more commodities can be supplied even at a lower price.

6. No Speculation

Law of supply assumes that the sellers will not speculate the changes in the price of the product in future. But, if the prices are expected to increase further in future then the seller would not expand the supply with a present increase in the price.

7. The Prices of other Goods are Constant

It is assumed in the law of supply that the prices of other goods are constant. If the price of other products increases more rapidly than the product in consideration, then the producers may shift their resources to those products which generate profits due to rise in prices. In this situation, the product in consideration will not be supplied inspite of increase in prices.

Expectations to Law of Supply

(a) Supply of Labour

If we take the supply of labour at very high wage, we may find that the supply of labour had decreased instead of increasing.

(b) Agricultural Products

Since the production of agricultural products cannot be increased beyond a certain limit, the supply cannot be increased beyond this limit even on an increase in their prices.

(c) Artistic Goods

Supply of artistic goods cannot be increased or decreased easily.

(d) Goods of Auction

Supply of goods of auction is limited as such cannot neither be increased not decreased.

(e) Hope of Change in the Prices of Commodities in Near Future

If the price of commodity is on rising pace, then the supply of such commodity decreases as producers and sellers will like to store this commodity and vice-versa.

2.5.3 Elasticity of Supply

Q33. Explain elasticity of supply?

OR

Explain elasticity of supply. Write about the types of elasticity of supply.

Ans :

Elasticity of Supply

The degree to which the supply of the product increases (or) decreases due to the change in the product price is termed as the elasticity of supply. Elasticity of supply is considered as the responsiveness of the sellers to a change in the price of the product.

The following formula can be used for measuring the elasticity of supply,

$$E_S = \frac{\text{Percentage change in quality supplied}}{\text{Percentage change in price}}$$

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P}{Q_s}$$

Where,

E_s = Elasticity of supply

AQ_s = The change in quantity supplied

AP = The change in price

Q_s = The original quantity supplied

P = The original price.

The elasticity of supply is depicted in the figure given below,

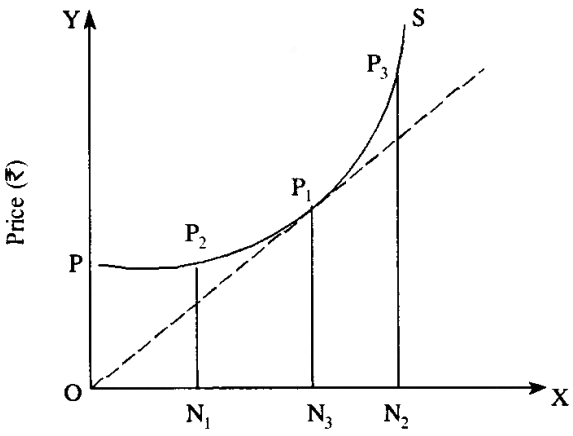


Fig.: Quantity Supplied (Units)

Figure represents the following,

(a) P and P_2 = perfectly elastic supply

(b) P_3 and S = perfectly inelastic supply

(c) P_2 and P_1 = Elastic supply

(d) P_1 and P_3 = Inelastic supply.

The time element basically has significant impact on the elasticity of supply. There is more elasticity of supply in the long-period of time, while the supply curve in a short period of time is perfectly inelastic.

Types

The elasticity of supply is broadly classified into five types, which are as follows,

1. Perfectly elastic supply
2. Perfectly inelastic supply

3. Relatively elastic supply
4. Relatively inelastic supply
5. Unitary elastic supply.

1. Perfectly Elastic Supply

The situation in which there is a change in the supply (or) sales of a product, inspire of no change in the price level is known as perfectly elastic supply. In such case, the elasticity is infinite.

$(E = \infty)$

2. Perfectly Inelastic Supply

The situation in which there is no change in the supply (or) sales of a product inspite of a drastic change in the price level is termed as perfectly inelastic supply. Here, the elasticity is equal to zero.

$(E = 0)$

3. Relatively Elastic Supply

Under relatively elastic supply, the rate of change of supply (or) sales is greater than the rate of change of price. Here, the elasticity of supply is greater than one.

$(E > 1)$

4. Relatively Inelastic Supply

The situation in which the rate of change of supply (or) sales is less than the rate of change of price is termed as relatively inelastic supply. The elasticity of supply here is less than one.

$(E > 1)$

5. Unitary Elastic Supply

In unitary elastic supply, the rate of change of supply (or) sales is perfectly equal to the rate of change of price. Here, the elasticity is equal to one.

$(E = 1)$

Q34. Explain the measurement of elasticity of supply.

Ans :

There are two methods of measuring elasticity of supply:

(i) The ratio method

(ii) The point method.

(i) The Ratio Method

The numerical co-efficient of the degree of elasticity of supply is obtained by using the ratio method. The co-efficient of elasticity of supply may vary between zero and infinity.

(ii) The Point Method

On a given supply curve, the elasticity of supply at a point P is measured by the ratio of the distance along the tangent from the point P on the supply curve to the point where it intersects the horizontal axis and the distance along the tangent from the point P on the supply curve to the point where it intersects the vertical axis.

Elasticity of supply is defined as the responsiveness of the quantity supplied of a good to change in its price. It is denoted as E_s.

$$E_S = \frac{\text{\% Change in Quantity Supplied}}{\text{\% Change in Price}}$$

$$= \frac{\text{\% Change in Quantity Supplied}}{\text{Change in Price}} \times \frac{\text{Original Price}}{\text{Quantity Supplied}}$$

$$E_S = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

Where,

E_S = Price Elasticity of Supply

Δ_Q = Change in Quantity Supplied

Q = Original Quantity Supplied

ΔP = Change in Price

P = Original Price.

Q35. Explain the factors Influencing deter-mining of supply.

Ans :

The following are the determinants of elasticity of supply,

1. Time

The time period is broadly divided into three types which are as follows.

(i) Market Period: In market period, the supply is set in such a manner that no factor of production can be changed.

(ii) Short Period: It is the time period in which the supply is adjusted by changing the valuable factors such as raw materials, labor and so on.

(iii) Long Period: In long period, the supply can be changed willfully as all the factors can be changed.

The elasticity of supply of the commodity will be zero, specifically in the market period in which the supply is fixed. The elasticity will be higher in the long run when compared to the short ran as the. chances of changing the output is less in the short run instead of long run.

2. The Relationship between Minimum Supply Prices of Different Firms

In case if all the firms 'Which are selling a specific commodity provides their supply to the market at more (or) less the same minimum price, then, in such case the supply of these commodities will prefer to be elastic at that price. In the same way, if the minium price of the commodity increases, then greater number, of Tirms are engaged and the elasticity of supply will also he greater.

3. The Cost of Attracting Factors of Production

A wide range of factors are required to expand the output. If output of an industry increases then higher amount of factor prices must be-paid.

4. Barriers to Entry

Some industries does not allow the new firms to enter into the market which in turn affects the responsiveness of supply to changes in the price.

5. The Behavior of Costs as the Output Changes

In case if the costs increases rapidly with an increase in output then higher amount if costs are involved in purchasing the additional factors of production and there is a possibility of decreasing the elasticity of supply of commodity.

The nature of 'factors affects the elasticity of supply of a factor' to it Specific industry in two major ways which are as follows,

(a) The degree of possibility and usefulness to substitute other factors.

(b) The elasticity. of demand for substitute goods for which the factor under analysis offers.

Short Question and Answers

1. Define demand.

Ans :

In economic science, the term "demand" refers to the desire, backed by the necessary ability to pay. The demand for a good at a given price is the quantity of it that can be bought per unit of time at the price. There are three important things about the demand :

1. It is the quantity desired at a given price.
2. It is the demand at a price during a given time.
3. It is the quantity demanded per unit of time.

Meaning

Demand is the amount of particular economic goods or services that a consumer or group of consumers will want to purchase at a given price at a particular time.

Therefore, demand means desire backed up by adequate purchasing power to pay for the product when demanded and willingness to spend the money for the satisfaction of that desire.

Demand = Desire to buy + Ability to pay + Willingness to pay.

Definitions

(i) According to Benham, "The demand for anything, at a given price, is amount of it, which will be bought per unit of time, at that price".

(ii) According to Bobber, "By demand we mean the various quantities of a given commodity or service which consumers would buy in one market in a given period of time at various prices".

(iii) According to G.L. Thiekettle, "The demand for any commodity or service is amount that will be bought at any given price per unit of time".

2. Demand Function.

Ans :

A demand function is a mathematical relationship between the quantity demanded of the commodity and its determinants. A demand function can be represented as,

$Q = f$ (demand determinants)

Where,

Q = Quantity demanded of a commodity.

Types

Generally, a demand function is of two types,

(i) Individual Demand Function

Individual demand function is a mathematical relationship between the demand by an individual consumer and the determinants of individual demand. Mathematically, it can be expressed as,

$$Q_x = f(P_x, I, P_1 \ldots P_n, T, A, E_p, E_I U)$$

Where,

Q_x = Quantity demanded of the commodity x

P_1 = Price of the commodity itself

I = Consumer's Income

$P_x \ldots P_n$ = Prices of the related goods

T = Consumer tastes and preferences

A = Advertisement

$\in_1$ = Consumer's expectation about future prices

E_j = Consumer's expectation about his/her future income

U = Other determinants.

An individual demand function can also be defined as the functional relationship of the quantity demanded by an individual and its determinants.

(ii) Market/Aggregate Demand Function

Market/Aggregate demand function is the functional relationship between the market demand for a commodity and the determi-nants of market demand. Mathematically it can be expressed as,

$$Q = f(P_x, I, P_1, ... P_n, T. A, E_p, E_I, P, D, U)$$

Where,

Q_x = Quantity demanded of the commodity x.

P_x = Price of the commodity itself

I = Consumer's Income

$P_1 ... P_n$ = Prices of the related goods

T = Consumer tastes and preferences

A = Advertisement

E_p = Consumer's expectation about future prices

E_I = Consumer's expectation about his/her future income.

P = Population or market size

D = Distribution of consumers in the market according to income, age, gender etc.

U = Other determinants.

3. Types of Demand Schedule

Ans :

There'are two types of demand such like,

(i) Individual demand schedule

(ii) Market demand schedule

(i) Individual Demand Schedule

An individual demand schedule is a tabular form showing the list of the quantities of a commodity that an individual consumer is willing to purchase corresponding to the given price of that commodity per unit of time. The table below shows a demand schedule of an individual consumer, say Mr. M for oranges.

Price of oranges per dozen (`)	Quantity demanded by Mr. M
45	2
38	3
30	4
25	6
20	10

(ii) Market Demand Schedule

Market demand schedule is a tabular form representing the list of quantities demanded of a commodity by all the buyers in a given market at different price levels. In other words, the market demand schedule represents the total market demand at various prices. A market demand schedule

is obtained as a combination of all individual demand schedules. Theoretically, a market demand schedule is obtained by compiling and combining all the individual demand schedules in a given market. Mathematically, it is obtained by the horizontal additions of quantities at various prices related in the individual demand schedules. The table below shows an example of a market demand schedule with individual consumers P, Q and R.

Price of the Commodity (`)	Quantity Demanded by Individuals			Total Market Demand
	A + B + C			
6	1	1	2	4
5	2	3	4	9
4	3	5	5	13
3	4	6	7	17
2	5	7	10	22
1	6	8	12	26

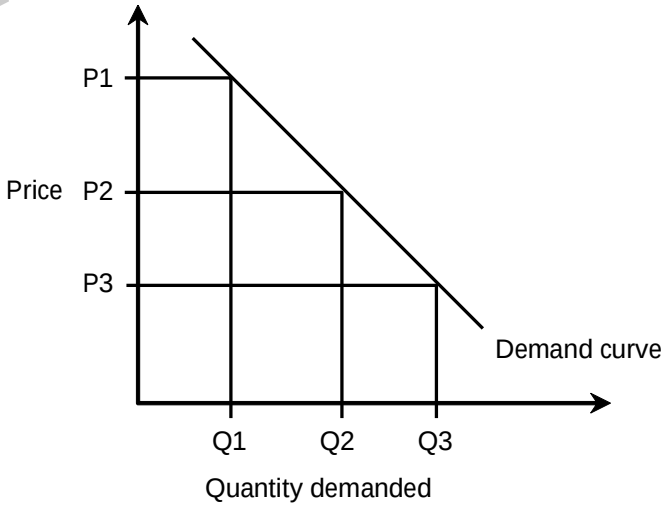
4. Define law of Demand.

Ans :

The law of demand states that other factors being constant (cetris peribus), price and quantity demand of any good and service are inversely related to each other. When the price of a product increases, the demand for the same product will fall.

Description

Law of demand explains consumer choice behavior when the price changes. In the market, assuming other factors affecting demand being constant, when the price of a good rises, it leads to a fall in the demand of that good. This is the natural consumer choice behavior. This happens because a consumer hesitates to spend more for the good with the fear of going out of cash.



The above diagram shows the demand curve which is downward sloping. Clearly when the price of the commodity increases from price p3 to p2, then its quantity demand comes down from Q3 to Q2 and then to Q3 and vice versa.

5. Giffen Goods

Ans :

Some special varieties of inferior goods are termed as Giffen goods. Cheaper varieties of this category like bajra, cheaper vegetable like potato come under this category. Sir Robert Giffen or Ireland first observed that people used to spend more their income on inferior goods like potato and less of their income on meat. But potatoes constitute their staple food. When the price of potato increased, after purchasing potato they did not have so many surpluses to buy meat. So the rise in price of potato compelled people to buy more potato and thus raised the demand for potato. This is against the law of demand. This is also known as Giffen paradox.

6. Conspicuous Consumption

Ans :

This exception to the law of demand is associated with the doctrine propounded by Thorsten Veblen. A few goods like diamonds etc., are purchased by the rich and wealthy sections of the society. The prices of these goods are so high that they are beyond the reach of the common man. The higher the price of the diamond the higher the prestige value of it. So when price of these goods falls, the consumers think that the prestige value of these goods comes down. So quantity demanded of these goods falls with fall in their price. So the law of demand does not hold good here.

7. Elasticity of Demand

Ans :

The law of demand simply explains the inverse relationship between price and quantity demanded. It doesn't specify how much more is purchased when price falls and how much less is purchased when price rises. In order to understand the rate of change in price and consequent changes in demand, elasticity of demand concept is used.

Elasticity is one of the most important concepts in necoclassical economic theory. It is useful in understanding the incidence of indirect taxation, marginal concepts as they relate to the theory of the firm and distribution of wealth and different types of goods. Elasticity is also crucially important in any discussion of welfare distribution, in particular consumer surplus, producer surplus or government surplus.

Meaning

Elasticity of demand is the responsiveness of demand for a commodity to changes in its determinants.

$$\text{Elasticity of Demand} = \frac{\text{Percentage change in quantity demanded of commodity}}{\text{Percentage change in its price}}$$

Definitions

(i) According to In the words of Dr. Marshall, "Elasticity of Demand may be defined as the percentage change in the quantity demanded divided by the percentage change in the price."

(ii) According to Boulding, "Price elasticity of demand measures the responsiveness of the quantity demanded to the change in price."

(iii) According to In the words of Dooley, "The price elasticity of demand measures the responsiveness of the quantity demanded to a change in its price."

(iv) According to Antol Murad, "Elasticity of demand is the ratio of relative change in quantity to relative change in price."

Thus, price elasticity of demand is a device to measure the rate of change in the quantity of a product demanded in response to a small change in its price.

8. Price Elasticity of Demand

Ans :

Price elasticity of demand is the measure of responsiveness of quantity demanded of a commodity to change in price along a given demand curve. In other words, it can be defined as the extent of response of demand for a commodity to a given change in price, with other demand determinants being constant. Also, it is defined as the ratio of relative change in demand and price variables. That means, it is the ratio of proportionate change in the quantity demanded of a commodity to proportionate challenge in its price mathematically, it can be represented as,

$$\varepsilon_p = \frac{\text{Proportionate change in the quantity demanded of a commodity}}{\text{Proportionate change in the price of the commodity}}$$

$$\varepsilon_p = \frac{\Delta Q / Q_i}{\Delta P / P_1}$$

$$\therefore \quad \varepsilon_p = \frac{\Delta P}{\Delta Q} \cdot \frac{Q_1}{P_1}$$

where,

ε_p – Price elasticity of demand

Δ_Q – Proportionate change in the quantity demanded

Q_1 – Initial quantity demanded/quantity demanded at the original price/quantity demanded before any change in price.

P_1 – Initial/original price

Δ_p – Proportionate change in the price of the commodity.

9. Income Elasticity of Demand.

Ans :

Consumer's income is one of the important determinants of demand. Income elasticity of demand is the measure of the extent to which a consumer's demand for a commodity changes as a result of changes in his income. Income elasticity of demand is defined as the ratio of proportionate/percentage change in the quantity demanded of a commodity to the proportionate/percentage change in the consumer's income. Mathematically, it is represented as,

$$\varepsilon_1 = \frac{\text{Percentage change in the quanity demanded}}{\text{Percentage change in consumer's income}}$$

$$\varepsilon_1 = \frac{\Delta Q / Q_1}{\Delta I / I_1} = \frac{\Delta Q}{\Delta I} \cdot \frac{I_1}{Q_1}$$

Where,

ε_1 = Income elasticity of demand

Δ_Q = Percentage change in the quantity demand.

Q_1 = Initial quantity demanded of a commodity.

Δ_I = Percentage change in the consumer's income

I = Consumer's initial income.

10. Advertisement elasticity of demand.

Ans :

The degree of responsiveness of quantity demanded to the change in the advertisement expense of expenditure.

Ea = Change in quantity demanded × original advertisement expenses

Change in advertisement expenses original quantity demanded

Important factors influencing Advertisement

i) Promotional elasticity of demand will be affected, depending on whether it is a new product or the product with a growing market.

ii) The amount a competitor reacts to the firm's advertisement.

iii) The time interval between the advertisement expensed or expenditure and the unrespon-siveness of the sales.

iv) The influence of non-advertisement deter-minants of demands such as trends, price, income etc.

11. Supply.

Ans :

Supply of a commodity is the amount of its which the sellers are able and willing to offer for sale at a price during a certain period of time. Supply is a relative term - related to price and time. Market supply means the total quantity of a commodity that all the firms are willing to sell at a given during a given time period. It is found by adding the supply of the firms selling the commodity.

Supply analysis can be used to determine the impact of changes in product and factor prices, in technology, and in access on factor demands (including labor), production, marketed output, aggregate supply, and incomes. Generally, it can be used to analyze the impact on production of the removal of barriers to access or other changes in markets. Supply analysis, in the employment context, deals with key staffing questions related to current staffing levels in an organization.

Definitions

(i) According to Thomas Supply of goods is the quantity offered for sale in a given market at a given time at various prices.

(ii) According to Samuelson Supply refers to the amounts of a good that producer in a given market in a given market desired to sell, during a given time period at various prices, Ceteris Paribus.

12. Define supply function.

Ans :

The mathematical function explaining the quantity supplied in terms of its various determi-nants, including price; thus the algebraic representation of the supply curve.

Mathematical or functional relationship between supply and its determinants is called supply function. It is a given as :

$$Q_x = f(P_x, C_x, T_x)$$

where

Q_x = Supply of Commodity X

P_X = Price of Commodity X

C_x = Cost of Production of Commodity X

T_x = Technology of its Production.

13. Elasticity of Supply.

Ans :

The degree to which the supply of the product increases (or) decreases due to the change in the product price is termed as the elasticity of supply. Elasticity of supply is considered as the responsiveness of the sellers to a change in the price of the product.

The following formula can be used for measuring the elasticity of supply,

$$E_S = \frac{\text{Percentage change in quality supplied}}{\text{Percentage change in price}}$$

$$E_s = \frac{\Delta Q_s}{\Delta P} \times \frac{P}{Q_s}$$

Where,

E_s = Elasticity of supply

AQ_s = The change in quantity supplied

AP = The change in price

Q_s = The original quantity supplied

P = The original price.

The elasticity of supply is depicted in the figure given below,

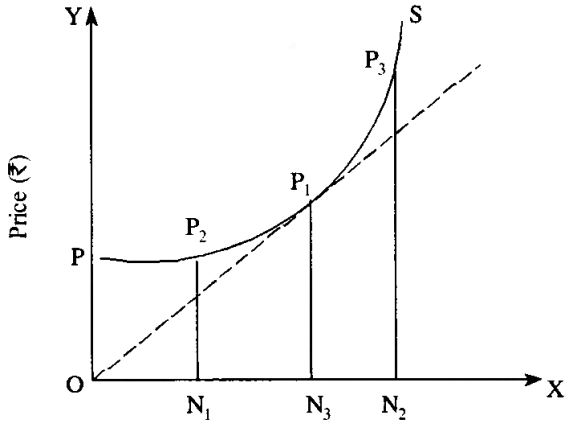


Fig.: Quantity Supplied (Units)

Figure represents the following,

(a) P and P_2 = perfectly elastic supply

(b) P_3 and S = perfectly inelastic supply

(c) P_2 and P_1 = Elastic supply

(d) P_1 and P_3 = Inelastic supply.

The time element basically has significant impact on the elasticity of supply. There is more elasticity of supply in the long-period of time, while the supply curve in a short period of time is perfectly inelastic.

14. Derived Demand

Ans :

Derived demand is a term in economics that describes the demand for a certain good or service resulting from a demand for related, necessary goods or services. For example, the demand for large-screen televisions creates a derived demand for home theater products such as audio speakers, amplifiers, and installation services.

15. Demand Contraction

Ans :

When quantity demanded of a commodity decreases due to an increase in own price of the commodity, other factors remaining constant, it is a situation of contraction of demand.

Choose the Correct Answers

1. When any quantity can be sold at a given price and when there is no need to reduce price, the demand is said to be [b]

   (a) Perfectly inelastic (b) Perfectly elastic

   (c) Relatively elastic (d) Relatively inelastic

2. The demand is said to be relatively inelastic when the change in demand is _____ the change in the price. [b]

   (a) More than (b) Less than

   (c) Equal to (d) Not related to

3. If the income elasticity is positive and greater than one, it is a [d]

   (a) Necessity (b) Inferior good

   (c) Normal good (d) Superior good

4. If the price rises, the demand [b]

   (a) Rises (b) Falls

   (c) First falls and then rises (d) First rises and then falls

5. Which of the following refers to quantity demanded in response to a given change in price? [a]

   (a) Price elasticity (b) Cross elasticity

   (c) Income elasticity (d) Advertising elasticity

6. Price elasticity is always [b]

   (a) Positive (b) Negative

   (c) Consistent (d) Declining

7. Which of the following does not hold good in case of indifference curve? [b]

   (a) Sloping downwards (b) Sloping upwards

   (c) Convex to the origin (d) Constant slope

8. A product or service is said to have demand when [d]

   (a) The buyer has the desire

   (b) When the buyer does not have money

   (c) When the buyer is not willing to pay for it

   (d) When the buyer has the desire for the product or service and is capable of paying for it

9. Elasticity computed at a given point on the demand curve for an infinitesmal change in price is called [c]

   (a) Unit elasticity (b) Arc elasticity

   (c) Point elasticity (d) Arc point elasticity

10. If the price is said to be inelastic, then it means that the proportionate change in the quantity demanded is the proportionate change in the price. [c]

(a) Equal (b) More

(c) Less (d) Double

11. Which of the following is correct? [a]

(a) Elasticity is the slope of the demand curve

(b) Elasticity is always greater than unity

(c) Elasticity is always less than unity

(d) Elasticity is always more than two

12. Demand for petrol is [b]

(a) Elastic (b) Inelastic

(c) Perfectly elastic (d) Perfectly inelastic

13. For which of the following categories is the income elasticity of demand negative? [a]

(a) Inferior goods (b) Luxury goods

(c) Medium goods (d) Necessities

Fill in the Blanks

1. Rate of responsiveness in demand of a commodity for a given change in price is called _____.
2. When a little change in price leads to a significant change in the quantity demanded is then, the elasticity is said to be _____ .
3. In case of unity elasticity, the elasticity is equal to _____ .
4. The ratio of proportionate change in quantity demanded of a particular product to the proportionate change in its price is called _____ elasticity of demand.
5. Cross elasticity of demand refers to the quantity demanded of a product in response to a change in the price of _____ product, whether it is substitute or complementary.
6. The more the number of alternative uses, the demand for a particular product is said to be _____ demand.
7. A product with lower number of substitutes is enjoys _____ demand.
8. The proportionate change in quantity demanded resulting from a very small change in price of that commodity is known as _____ elasticity of demand.
9. The elasticity between two separate points of demand curve is called _____ elasticity.
10. Arc elasticity measures the average responsiveness to price change over a _____ Stretch on the demand curve.

ANSWERS

1. Elasticity
2. Price elasticity
3. One
4. Price
5. Related
6. Inelastic
7. Inelastic
8. Point
9. Arc
10. Finite

UNIT III

Production and Cost Concepts : Theory of Production, Production Function, Input Output Combination , Short Run Production Laws, Law of Diminishing Marginal Returns to Scale, ISO-quant Curves, ISO-cost Curves

3.1 PRODUCTION

Q1. What do you understand by production? What are the factors of production?

Ans :

Production

Production is an activity of transforming the inputs into output. It involves step-by-step conversion of one form of materials into another form through chemical or mechanical processing in order to create or enhance the utility or usability of the products or services.

Economics view production is as an activity through which utility for a product is created or enhanced. **According to E.S. Buffa,** "Production is an process by which goods and services are created". In economics, the term production means a process in which the resources are transformed or converted into a different and more useful commodity or service. In general production means transforming inputs into an outputs. The term production is however limited to "manufacturing organizations" only.

Production i.e., transformation of inputs into output can be any of the three forms change in form, change in phase and change in time. The output produced can be either the final product (like a PC) or an intermediate product (like a semiconductor used in manufacturing a PC). The output goods or services may be either tangible or intangible. Production of a chair from wood is a tangible output whereas medical service by a doctor is an intangible output. The figure indicates the production process.

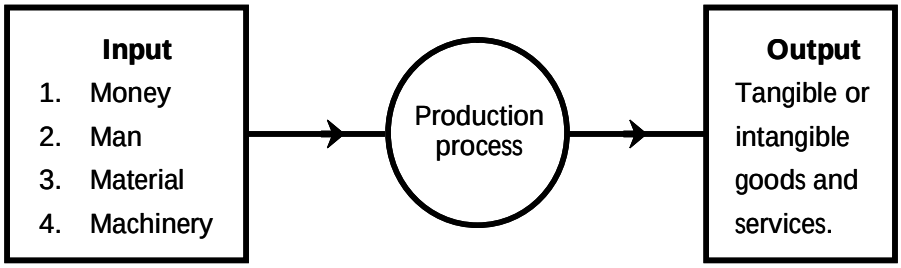


Fig.: Production Process

Factors of Production

Factors of production are the inputs available to supply goods and services in an economy.

Factors of production are the inputs available to supply goods and services in an economy are shown in Figure.

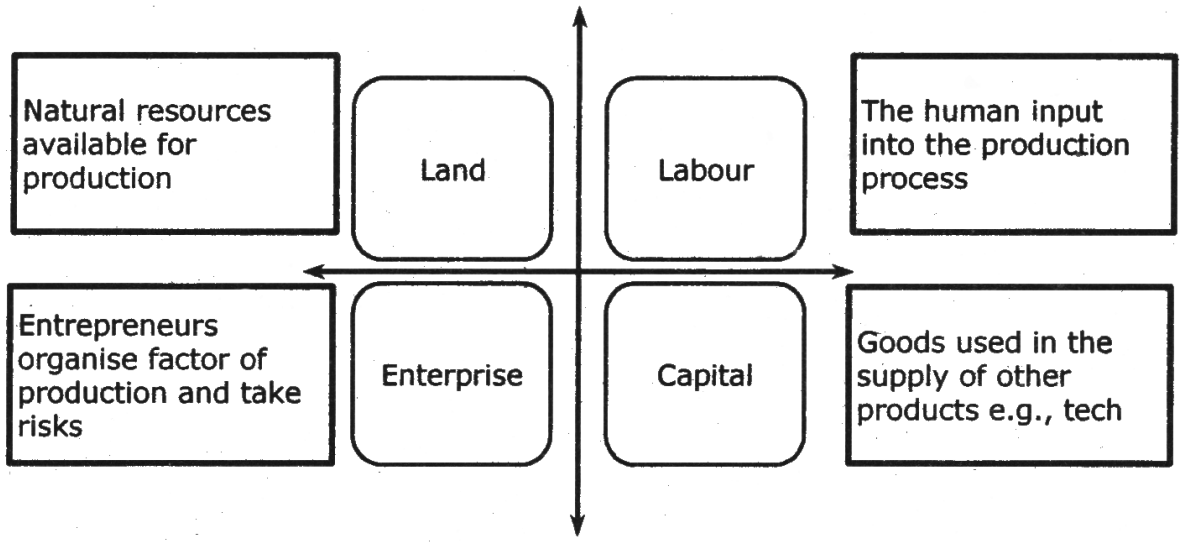


Fig.: Factors of Production (Factor Inputs)

(1) Land

(i) Land includes all natural physical resources e.g., fertile farm land, the benefits from a temperate climate or the harnessing of wind power and solar power and other forms of renewable energy.

(ii) Some nations are richly endowed with natural resources and then specialise in the their extraction and production.

Example: The high productivity of the vast expanse of farm land in the United States and the oil sands in Alberta, Canada. Other countries Such as Japan are heavily reliant on importing these resources.

(2) Labour

(i) Labour is the human input into production e.g., the supply of workers available and their productivity.

(ii) An increase in the size and the quality of the labour force is vital if a country wants to achieve growth. In recent years the issue of the migration of labour has become important. Can migrant workers help to solve labour shortages? What are the long-term effects on the countries who suffer a drain or loss of workers through migration?

(3) Capital

(i) Capital goods are used to produce other consumer goods and services in the future.

(ii) Fixed capital includes machinery, equipment, new technology, factories and Other buildings.

(iii) Working capital means stocks of finished and semi-finished goods or components that will be either consumed in the near future or will be made into consumer goods.

(iv) New items of capital machinery, buildings or technology are used to boost the productivity of labour.

Example : Improved technology in farming has vastly increased productivity and allowed millions of people to move from working on the land into more valuable jobs in other industries.

(4) Entrepreneurship

(i) Regarded by some as a specialised form of labour input.

(ii) An entrepreneur is an individual who supplies products to a market to make a profit.

(iii) Entrepreneurs will usually invest their own financial capital in a business and take on the risks. Their main reward is the profit made from running the business.

3.2 THEORY OF PRODUCTION

Q2. Explain the concept of theory of production?

Ans :

In economics, production theory explains the principles in which the business has to take decisions on how much of each commodity it sells and how much it produces and also how much of raw material ie., fixed capital and labor it employs and how much it will use. It defines the relationships between the prices of the commodities and productive factors on one hand and the quantities of these commodities and productive factors that are produced on the other hand.

Concept

Production is a process of combining various inputs to produce an output for consumption. It is the act of creating output in the form of a commodity or a service which contributes to the utility of individuals.

In other words, it is a process in which the inputs are converted into outputs.

Function

The Production function signifies a technical relationship between the physical inputs and physical outputs of the firm, for a given state of the technology.

$$Q = f(a, b, c, \ldots z)$$

Where a,b,c ....z are various inputs such as land, labor ,capital etc. Q is the level of the output for a firm.

If labor (L) and capital (K) are only the input factors, the production function reduces to

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

Production Function describes the technological relationship between inputs and outputs. It is a tool that analysis the qualitative input – output relationship and also represents the technology of a firm or the economy as a whole.

Production Analysis

Production analysis basically is concerned with the analysis in which the resources such as land, labor, and capital are employed to produce a firm's final product. To produce these goods the basic inputs are classified into two divisions "

Variable Inputs

Inputs those change or are variable in the short run or long run are variable inputs.

Fixed Inputs

Inputs that remain constant in the short term are fixed inputs.

Cost Function

Cost function is defined as the relationship between the cost of the product and the output. Following is the formula for the same –

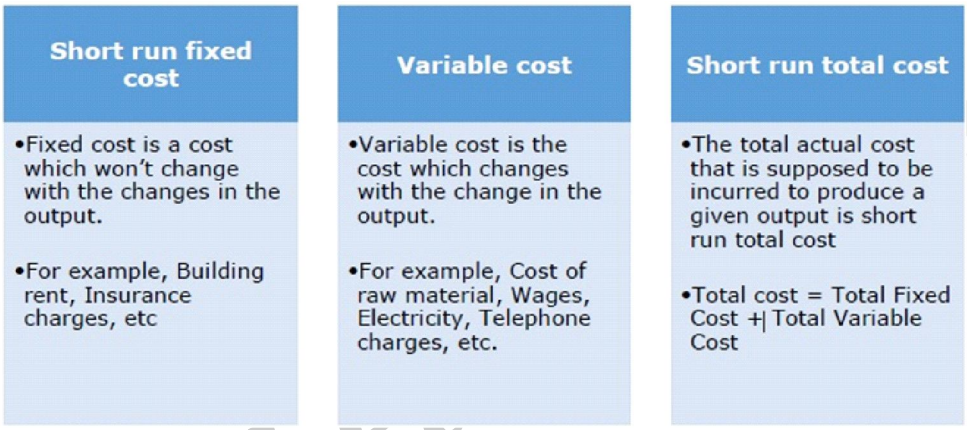
$$C = F [Q]$$

Cost function is divided into namely two types

Short Run Cost

Short run cost is an analysis in which few factors are constant which won't change during the period of analysis. The output can be changed ie., increased or decreased in the short run by changing the variable factors.

Following are the basic three types of short run cost



Long Run Cost

Long-run cost is variable and a firm adjusts all its inputs to make sure that its cost of production is as low as possible.

Long run cost = Long run variable cost

In the long run, firms don't have the liberty to reach equilibrium between supply and demand by altering the levels of production. They can only expand or reduce the production capacity as per the profits. In the long run, a firm can choose any amount of fixed costs it wants to make short run decisions.

3.3 PRODUCTION FUNCTION

Q3. Define production function?

Ans : **(Dec.-19)**

The production function is purely a relationship between the quantity of output obtained or given out by a production process and the quantities of different inputs used in the process. Production function can take many forms such as linear function or cubic function etc.

Definition of Production Function

"Production Function" is that function which defines the maximum amount of output that can be produced with a given set of inputs.

– Michael R Baye

"Production Function" is the technical relationship, which reveals the maximum amount of output capable of being produced by each and every set of inputs, under the given technology of a firm.

- Samuelson

From the above definitions, it can be concluded that the production functions is more concerned with physical aspects of production, which is an engineering relation that expresses the maximum amount of output that can be produced with a given set of inputs.

Production function enables production manager to understand how better he can make use of technology to its greatest potential.

Mathematically, a production function is represented as,

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

Where,

Q = Quantity of the output produced

f = Function of L, C, M

L = Labour units

C = Capital employed

M = Machinery raw materials.

In the above production function, the inputs considered are labour, capital and raw materials. But an empirical production function is very complex with a wide range of inputs like land, labour, capital, materials time and technology. With these inputs, the production function is expressed as,

$$Q = f\{L_d, L, C, M, T, t)$$

Where,

Q = Quantity of the output produced

L_d = Land and buildings

L = Labour units

C = Capital employed

M = Materials

T = Technology

t = Time period of production

f = Function of L,, L, C, M, T, t

In order to reduce the complexity, economists have considered the three main inputs - labour, capital and machinery for indicating a production function. Therefore, with these inputs the production function can be expressed as,

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

Q4. Explain the significance / importance of production function.

Ans :

1. Production function shows the maximum output that can be produced by a specific set of combination of input factors.
2. There are two types of production function, one is short-run production function and the other is long-run production function. The short-run production explains how output change is relation to input when there are some fixed factors. Similarly, long run production function explains the behaviors of output in relation to input when all inputs are variable.
3. The production function explains how a firm reaches the most optimum combination of factors so that the unit costs are the lowest.
4. Production function explains how a producer combines various inputs in order to produce a given output in an economically efficient manner.
5. The production function helps us to estimate the quantity in which the various factors of production are combined.

Q5. Explain the managerial Use of production function.

Ans :

The production function is of great help to a manager or business economist. The managerial uses of production function are outlined as below :

1. It helps to Determine Least Cost Factor Combination

The production function is a guide to the entrepreneur to determine the least cost factor combination. Profit can be maximized only by minimizing the cost of production. In

order to minimize the cost of production, inputs are to be substituted. The production function helps in substituting the inputs.

2. It Helps to Determine Optimum Level of Output

The production function helps to determine the optimum level of output from a given quantity of input. In other words, it helps to arrive at the producer's equilibrium.

3. It Enables to Plan the Production

The production function helps the entrepreneur (or management) to plan the production.

4. It Helps in Decision-making

Production function is very useful to the management to take decisions regarding cost and output. It also helps in cost control and cost reduction.

In short, production function helps both in the short run and long run decision-making process.

Q6. What do you understand by Cobb Douglas production function.

Ans :

Cobb and Douglas put forth a production function relating output in American manufacturing industries from 1899 to 1922 to labour and capital inputs. They used the following formula:

$$P = bL^{a} C^{1-a}$$

Where P is total output,

L = The index of employment of labour in manufacturing

C = Index of fixed capital in manufacturing

The exponents a and 1-a are the elasticities of production. These measure the percentage response of output to percentage changes in labour and capital respectively.

The function estimated for the USA by Cobb and Douglas is

$$P = 1.01L^{0.75} C^{0.25}$$

$$R^2 = 0.9409$$

The production function shows that one percent change in labour input, capital remaining the same, is associated with a 0.75 percent change in output. Similarly, one percent change in capital, labour remaining the same, is associated with a 0.25 percent change in output. The coefficient of determination (R^2) means that 94 percent of the variations on the dependent variable (P) were accounted for by the variations in the independent variables (L and C). It indicates constant returns to scale which means that there are no economies or diseconomies of large scale of production. On an average, large or small scale plants are considered equally profitable in the US manufacturing industry, on the assumption that the average and marginal production costs were constant.

Though Cobb-Douglas production function was based on macro-level study, it has been very useful for interpreting economic results. Later investigations revealed that the sum of the exponents might be very slightly larger than unity, which implies decreasing costs. But the difference was so marginal that constant costs would seem to be a safe assumption for all practical purposes.

Q7. Explain the importance of Cobb-Douglas production function.

Ans :

Cobb-Douglas production function is most popular in empirical research. The reasons for this are many :

1. The Cobb-Douglas function is convenient for international and inter-industry comparisons. Since a and P (which are partial elasticity coefficients) are pure numbers (i.e., independent of units of measurement) they can be easily used for comparing results of different samples having varied units of measurement.

2. Another advantage is that this function captures the essential non-linearities of production process and also has the benefit of the simplification of calculations by transforming the function into a linear form with the help of logarithms. The log-linear function becomes linear in its parameters, which is quite useful to a managerial economist for his analysis.

3. In addition to being elasticities, the parameters of Cobb-Douglas function also possess other attributes. **For example,** the sum of (a + P) shows the returns to scale in the production process; a and (3 represent the labour share and capital share of output respectively, and so on.
4. This function can be used to investigate the nature of long-run production function, viz., increasing, constant and decreasing returns to scale.
5. Although in its original form, Cobb-Douglas production function limits itself to handling just two inputs (e.g., L and K), it can be easily generalised for more that two inputs, like

$$Q = AX_1^a . X_2^b . X_3^c ..... X_n^p$$

Where, Q = Output

$X_1, X_2, ... X_n$ = Different inputs.

Q8. What are the criticisms of Cobb-Douglas production function.

Ans :

1. The function includes only two factors and neglects other inputs.
2. The function assumes constant returns to scale.
3. There is the problem of measurement of capital which takes only the quantity of capital available for production.
4. The function assumes perfect competition in the factor market which is unrealistic.
5. It does not fit to all industries.
6. It is based on the substitutability of factors and neglects complementarily of factors.
7. The parameters cannot give proper and correct economic implication.

3.4 INPUT OUTPUT COMBINATION

Q9. Explain input-output relationship of production function.

Ans : **(Dec.-19, Imp.)**

Optimum factor combination refers to the combination of factors with which a firm can produce a specific quantity of output at the lowest possible cost. A given level of output can be produced using many different combinations of two variable inputs. In choosing between the two resources, the saving in the resource replaced must be greater than the cost of resource added. The principle of least cost combination states that if two input factors are considered for a given output then the least cost combination will have inverse price ratio which is equal to their marginal rate of substitution.

Explanation

There are two methods of explaining the optimum combination of factor:

(i) The marginal product approach

(ii) The isoquant/iso-cost approach

These two approaches are now explained in brief:

(i) The Marginal Product Approach

In the long run, a firm can vary the amounts of factors which it uses for the production of goods. It can choose what technique of production to use, what design of factory to build, what type of machinery to buy. The profit maximization will obviously want to use that mix of factors of combination which is least costly to it. In search of higher profits, a firm substitutes the factor whose gain is higher than the other.

When the last rupee spent on each factor brings equal revenue, the profit of the firm is maximized. When a firm uses different factors of production or least cost combination or the optimum combination of factors is achieved.

(ii) The Isoquant/Iso-cost Approach

The least cost combination of factors or producer's equilibrium is now explained with the help of iso-product curves and iso-costs. The optimum factors combination or the least cost combination refers to the combination of factors with which a firm can produce a specific quantity of output at the lowest possible cost.

As we know, there are a number of combination of factors which can yield a given level of output. The producer has to choose, one combination out of these which yields a given level of output with least possible outlay. The least cost combination of factors for any level of output is that where the iso-product curve is tangent to an iso-cost curve. The analysis of producer's equilibrium is based on the following assumptions.

Assumption of Optimum Factor Combination

The main assumptions on which this analysis is based areas under:

1. There are two factors X and Y in the combinations
2. All the units of factors X are homogeneous and so is the case with units of factor Y.
3. The prices of factors X and Y are given and constants.
4. The total money outlay is also given.
5. In the factor market, it is the perfect completion which prevails.

Iso-cost line Least Cost Combination of Factors

A rational firm would combine the various factors of production its production function in such a way that with the minimum input and maximum output is obtained at the minimum cost. Such a combination is referred to as the least cost combination.

ISO-Cost Line

An Iso-cost line indicates all possible combinations of two inputs which can be purchased with a given amount of investment fund (outlay). Each combination of inputs has same total cost which includes the cost of two inputs. (X1 and X2) combined.

3.5 Short Run Production Laws

Q10. What do you understand by short run production?

Ans :

The law of variable proportions states that, "as more and more units of a variable factor are applied to the given quantity of a fixed factor, the total product may increase at an increasing rate initially, but eventually it will increase at a diminishing rate".

The functional relationship of the maximum quantity of a good or service that can be produced by a set of inputs, assuming that the amount of atleast one of the inputs used remains unchanged as the output varies is known as short-run production function.

A short-nm production function refers to a situation when only one input is variable and all other inputs are assumed to constant. Short-run production function is a matter of "Return to Factors".

According to G.Siigler, "as equal increments of one input are added, the inputs of other productive services being held are constant, beyond a certain point the resulting increments of product will decrease i.e., the marginal products will diminish".

In relation to agriculture, Marshall defined the law as, "an increase in the capital and labour applied in the cultivation of land causes in general a less than proportionate increase in the amount of product raised unless it happens to coincide with an improvement in the arts of agriculture".

A short-run production function can be represented as,

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

Where,

Q = Quantity of the output produced.

L = Labour units.

C = Capital employed.

M = Materials.

Here, the inputs labour (L), materials (M) and capital (C) are only taken because these are the variable inputs and they can only be converted into output in the short-run.

Variation of Output in the Short-run (Return to Factor)

The key terms associated with short- run production function are,

1. Total Product (TP)

Total product is the amount of output that is produced by using different quantities of inputs.

$$TP = \Sigma MP_L$$

(or) $$TP = AP \times N$$

Where,

MP_L = Sum of marginal product.

TP = Total product.

AP = Average product.

N = Number of units of a factor.

2. Marginal Product (MP)

Marginal product is defined as the change in the Total Product (TP) per unit change in a variable input. Let the variable input labour (L) be considered, the marginal product is,

$$MP_L = \frac{\Delta TP}{\Delta L}$$

Where,

MP_L = Marginal product of labour.

ATP = Change in total product.

AL = Unit change in the labour input.

3. Average Product (AP)

Average product may be defined as the Total Product (TP) per unit of variable input. If the variable input 'L' is considered, average product is,

$$AP_L = \frac{TP}{L}$$

Where,

AP_L = Average product of labour.

TP = Total product.

L = Labour units.

Q11. What do you understand by long run production function?

Ans :

The functional relationship of the maximum quantity of a good or a service that can be produced by varying the amount of all inputs used in production is known as long- run production function.

Long-run production function is the change in output zvhen all inputs used in production of a commodity are change simultaneously and in the same proportion. Long- run production function is a matter of "Return to Scale".

A long-run production function can be represented as,

$$Q = f(L_d, L, C, M, T, t)$$

Where,

Q = Quantity of output produced.

L_d = Land and building.

L = Labour units.

C = Capital employed.

M = Raw materials.

T = Technology.

t = Time period of production

Here, all the inputs are taken because in long-run all the inputs both fixed and variable can be charged.

In long-run, an organization has enough time to convert all the inputs or resources into output. In long-run all the production activities can be well planned and carried out in order to achieve the specified organizational goals.

Assumptions of Long-Run Production Functions: Long-run production function is based on the assumptions,

1. All the inputs both fixed and variable can be converted into output.
2. Production technique remains constant.

3.6 Law of Diminshing Return/Law of Variable Proportion

Q12. What are the different stages of law of variable proportion.

Ans : **(Dec.-20, Dec.-19, May-19, Dec.-18, May-18, Imp.)**

Law of variable proportions has a great significance in economic theory. This law examines the production function with one factor (input) variable by keeping the other factors (inputs) fixed. In the true sense, it refers to the relation between input and the output when the output is increased by varying the quantity of one input.

The Law of Variable Proportions is the new name for the famous 'Law of Diminishing Returns' of classical economics which played a vital role in the history of economic thought and occupies an equally important place in modern economic theory.

According to G. Stigler "As equal increments of one input are added, the inputs of other productive service being held constant, beyond a certain point the resulting increments of product will decrease i.e., the marginal products will diminish".

Assumptions

The law of variable proportions is based on the following assumptions,

i) The technology used in the production process should be constant. If the state of the technology used is increased, the Marginal Product (MP) and Average Product (AP) will rise instead of diminishing.

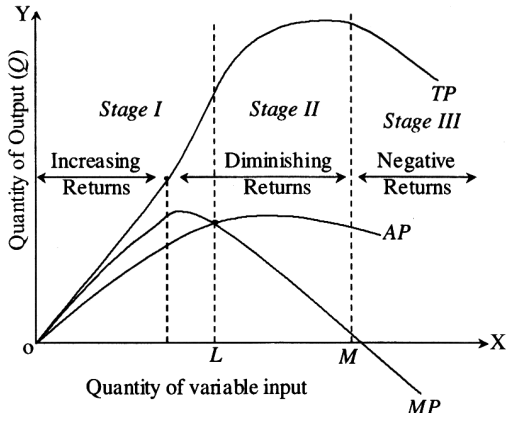
ii) The quantity of some of the inputs should be fixed. By doing so, the input proportions can be altered and their effect on the output can be known.

iii) The law does not hold in the situation where all the inputs are proportionately varied.

iv) The law is based on the possibility of varying the proportion in which various inputs can be combined to produce a product. The law is not applicable to those cases where the inputs must be used in fixed proportions to yield a product.

Stages

The behaviour of output when the varying quantity of one input is combined with a fixed quantity of the other can be categorized into three different stages.



Figure

TP = Total product

MP = Marginal product

AP = Average product

B = Point of inflection.

Variable Product (VP)	Total Product (TP)	Marginal Product (MP)	Average Product (AP)
0	0	-	-
1	4	4	4
2	15	11	7.50
3	37	22	12.33
4	48	11	2.75
5	45	-3	9

In the graph, quantity of variable input is taken on x-axis and quantity of output is taken on y-axis and the Total Product (TP), Average Product (AP) and Marginal Product (MP) are measured. The behaviour of these three curves is as follows,

TP = Goes on increasing to a point and after that it starts declining

AP = Increases initially and later it declines

MP = Increases initially and then decreases up to a negative value.

The behaviour of these curves is generally divided into three stages,

i) Stage I : Increasing returns

ii) Stage II : Decreasing returns

iii) Stage III: Negative returns,

i) Stage I : Increasing Returns

In this stage, the Total Product (TP) curve increases at an increasing rate upto point B indicating that the marginal product of the variable input (say labour (L)) is rising. From point B, the total product curve rises but at a diminishing rate indicating the fall of marginal product but positively.

The reason for the increase of total product curve both at an increasing rate and at a decreasing; rate during stage I because the slope of TP upto B increases and after B it declines. The shape of TP upto B is concave upwards and after B it is concave downwards.

The point B where TP stops increasing at an increasing rate and starts increasing at a decreasing rate is called 'point of inflation'. At the point of inflation, the Marginal Product (MP) curve is maximum and after that it starts decreasing. When the marginal product curve decreases, it exceeds the average product curve causing the average product curve to increase. Stage I ends where the average product curve reaches its maximum value. Stage I is known as the stage of increasing returns because average product of a variable input increases throughout the stage.

ii) Stage II: Decreasing Returns

In stage II, the total product continues to increase at a diminishing rate until it reaches a maximum value and marginal product and average product of the variable input decrease but positively. At the end of second stage, the marginal product of the variable input is zero and the total product is maximum. Stage II is very important because in this stage, the firm will seek to produce in its range. Stage II is known as the stage of diminishing returns because both the average product and the marginal product of the variable inputs fall continuously during this stage.

iii) Stage III: Negative Returns

In stage III, the Total Product (TP) curve declines with an increase in the quantity of variable input. As a result, the marginal product of the variable input is negative and the Marginal Product curve (MP) falls below x-axis. Stage III is called as the stage of negative returns because all the three curves TP, MP and AP decline and MP declines to a negative value.

The below table gives a clear understanding of three stages of law of variable proportions.

Stage of Production	I	II	III
Total Product (TP)	Initially increases at an increasing rate and later increases at a decreasing rate.	Increases at a decreasing rate and becomes maximum	Decreases
Average Product (AP)	Increases and reaches maximum.	Decreases	Continues to decrease
Marginal Product (MP)	Increases and reaches a maximum and starts falling.	Continues to fall and become zero	Becomes negative

Q13. Explain the applications of the law of variable proportion.

Ans :

The law of variable proportions is universal as it applies to all fields of production. This law applies to any field of production where some factors are fixed and others are variable. That is why it is called the law of universal application.

The main cause of application of this law is the fixity of any one factor. Land, mines, fisheries, and house building etc. are not the only examples of fixed factors. Machines, raw materials may also become fixed in the short period. Therefore, this law holds good in all activities of production etc. agriculture, mining, manufacturing industries.

1. Application to Agriculture

With a view of raising agricultural production, labour and capital can be increased to any extent but not the land, being fixed factor. Thus when more and more units of variable factors like labour and capital are applied to a fixed factor then their marginal product starts to diminish and this law becomes operative.

2. Application to Industries

In order to increase production of manufactured goods, factors of production has to be increased. It can be increased as desired for a long period, being variable factors. Thus, law of increasing returns operates in industries for a long period. But, this situation arises when additional units of labour, capital and enterprise are of inferior quality or are available at higher cost.

As a result, after a point, marginal product increases less proportionately than increase in the units of labour and capital. In this way, the law is equally valid in industries.

3.6.1 Law of Returns to Scale

Q14. Explain briefly about Returns to Scale.

Ans : **(Dec.-17, Dec.-16, Imp.)**

In the long run all factors of production are variable. No factor is fixed. Accordingly, the scale of production can be changed by changing the quantity of all factors of production.

Definition

"The term returns to scale refers to the changes in output as all factors change by the same proportion."

Koutsoyiannis

"Returns to scale relates to the behaviour of total output as all inputs are varied and is a long run concept".

Leibhafsky

Returns to scale are of the following three types:

1. Increasing Returns to scale.
2. Constant Returns to Scale
3. Diminishing Returns to Scale

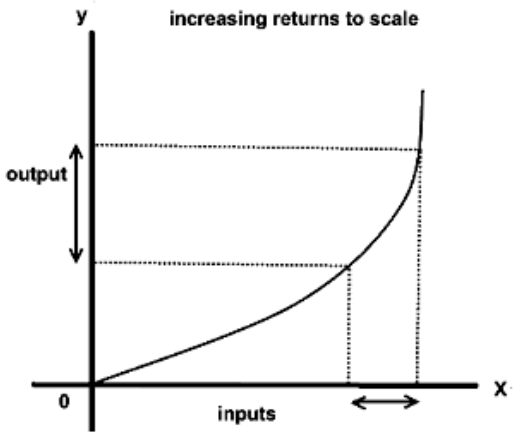
1. Increasing Returns to Scale

This law states that the volume of output keeps on increasing with every increase in the inputs. Where a given increase in inputs leads to a more than proportionate increase in the output, the law of increasing returns to scale is said to operate. We can introduce division of labour and other technological means to increase production. Hence, the total product increases at an increasing rate.

"An increase of labour and capital leads generally to improved organisation which increases the efficiency of the work of labour and capital. Therefore, an increase of labour and capital generally gives a return which increases more than in proportion."

"As the proportion of one factor in a combination of factors is increased, upto a point, the marginal productivity of the factor will increase."

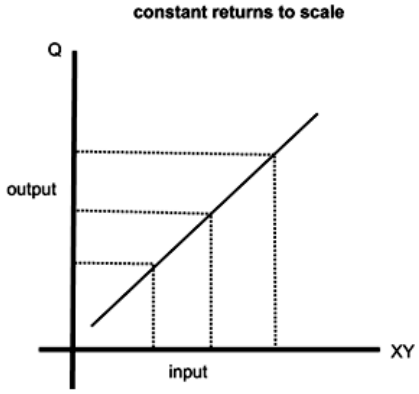
If the proportional increase in output (production) is larger than that of the inputs, then we have increasing returns to scale.



All factors of production (land, labor and capital) have been doubled, there is 100 percent increase in the factors of production whereas output has increased from 10 units to 25 units, which is more than double. There is an increase in output by 150%. It means increase in all inputs leads to a more than proportional increase in the output of the firm. Here increasing returns to scale is operating. Increasing returns to scale is achieved in the manufacturing industries.

2. Constant Returns to Scale

When the scope for division of labour gets re-stricted, the rate of increase in the total output remains constant, the law of constant returns to scale is said to operate. This law states that the rate of increase/decrease in volume of output is same to that of rate of increase/decrease in inputs.



If the proportional increase in all inputs is equal to the proportional increase in output (production), returns to scale are constant. For instance, if a simultaneous doubling of all inputs results in a doubling of production, then returns to scale are constant. 100% increase in the inputs may raise the production level to 100%.

3. Decreasing/Diminishing Returns to Scale

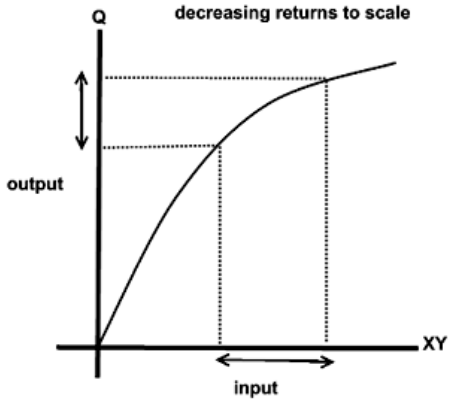
Where the proportionate increase in the inputs does not lead to equivalent increase in output, the output increases at a decreasing rate, the law of decreas-ing returns to scale is said to operate. This results in higher average cost per unit.

"As we increase the quantity for any one input which is combined with fixed quantity of other inputs, the marginal physical productivity of the variable input must eventually decline."

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

Mr. Joan Robinson, defines it in these words. The law of Diminishing Returns states that with a fixed amount of any one factor of production successive increase in other factor will after a point yield a diminishing increment of output"

If the output (production) increases than the proportionality with input increases, we have decreasing returns to scale



All factors of production (land, labor and capital) have been doubled. There is 100 percent increase in the factors of production whereas output has increased from 10 units to 15 units, which is less than double. There is an increase in output by 50%. It means increase in all inputs leads to a less than proportional increase in the output of the firm. Here diminishing returns to scale are operating. Diminishing returns to scale is achieved in those activities involving natural resources such as growing agricultural products.

These laws can be illustrated with an example of agricultural land. Take one acre of land. If you till the land well with adequate bags of fertilizers and sow good quality seeds, the volume of output increases. The following table illustrates further:

Capital (in units)	Labour (in units)	Percentage of increase in both inputs	Output (in units)	Percentage of Increase in output	Laws applicable
1	3	-	-	-	
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 low scale

From the above table, it is clear that with 1 unit of capital and 3 units of labour, the firm produces 50 units of output. When the inputs are doubled two units of capital and six units of labour, the output has gone up to 120 units. (From 50 units to 120 units). Thus, when inputs are increased by 100 percent, the output has increased by 140 percent. 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 labour, the output has gone up to 240 units, (from 120 units to 240 units). Thus, when inputs arc increased by 100 per cent, the output has increased by 100 per cent. That is, output also has doubled. This is governed by Law of Constant Returns to Scale.

When the inputs are further doubled, that is, to 8 units of capital and 24 units of labour, the output has gone up to 360 units, (from 240 units to 360 units). Thus, when input are increased by 100 per cent, the has increased only by 50 per cent. This is governed by Law of Decreasing Returns to Scale.

Q15. What are the differences between law of variable proprotions and return to scale?

Ans :

Basis of Difference	Laws of Variable Proportion	Returns to Scale
1) **Nature of Inputs**	Quantities of some inputs are fixed while quantities of other inputs vary.	Alt the inputs are variable.
2) **Time Element**	Known as short-run production function.	Known as long-run production function.
3) **Homogeneity**	Non-homogeneous production function.	Homogeneous production function.
4) **Law of Increasing Returns**	Non-linear – non-homogeneous production function.	Non-linear homogeneous production function.
5) **Law of Constant Returns**	Linear – non-homogeneous production function.	Linear homogeneous production function.
6) **Law of Diminishing Returns**	Non-linear – non-homogenous production function.	Non-linear homogeneous production function.

3.7 ISO-QUANT CURVES

Q16. Define isoquant. Explain how isoquants are used to represent a production function with two variable inputs.

Ans : **(Dec.-20, May-19, May-18, Imp.)**

The term isoquant has its origin from two words 'ifso' and 'quantus'. 'iso' is a Greek word meaning 'equal' and 'quantus' is a Latin word meaning 'quantity'. An isoquant curve is therefore called as 'iso-product curve' or 'equal-product curve' or 'production indifference curve'.

Definition

According to Peterson "An Iso-quant curve may be defined as a curve showing the possible combinations of two variable factors that can be used to produce the same total product."

According to Ferguson "An Iso-quant is a curve showing all possible combinations of inputs physically capable of producing a given level of output."

An isoquant is defined as the curve or locus of points representing various combinations of two inputs [say Labour (L) and Capital (C)] that yield the same level of output.

In other words, an isoquant is a line joining different combinations of two inputs (L and C) which result in the same quantity of output.

Isoquants are used to represent a production function with two variable inputs.

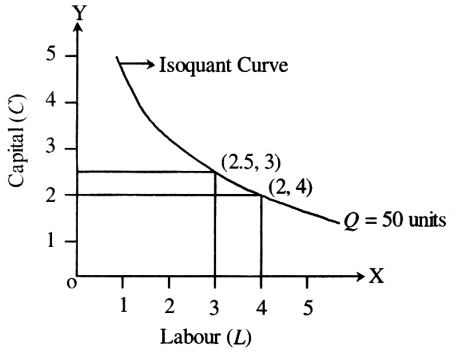
For example, let us consider a production function with the quantities of output produced by using different combinations of two inputs Labour (L) and Capital (C).

Capital (C) ↓ / Labour (L) →	1	2	3	4	5
5	54	76	85	92	86
4	19	35	82	15	21
3	13	53	47	80	23
2	21	36	75	82	91
1	7	23	46	13	80

Quantity of Output Produced (Q)

In the above table there are different quantities of outputs that are produced by various combinations of inputs labour and capital. For example the output '21' is produced by two combinations (2, 1) and (4, 5). The line joining these two outputs of same level produced by different (two) combinations of two inputs is called an 'isoquant'. Thus, the definition of isoquant holds.

Graphically an isoquant curve pan be constructed conveniently for two inputs of production. The below graph gives a clear idea.



The above graph reveals that an output of Q-50 units is produced by two different combinations of capital and labour respectively i.e., (2.5, 3) and (2,4) and the curve joining these two combinations is an isoquant curve.

An isoquant curve is similar to an indifference curve with two distinctions.

(i) An isoquant curve is constructed by two producer goods (labour and capital) whereas an indifference curve is made of two consumer goods.

(ii) An isoquant curve measures 'output', an indifference curve measures 'utility'.

Q17. List down the assumptions of Isoquant curves.

Ans :

Assumptions

An isoquant curve is generally drawn on the basis of the following assumptions.

(a) An isoquant curve has only two inputs say labour (L) and capital (C) to produce an output (Q).

(b) The two inputs are perfectly substitutable to each other but at a diminishing rate i.e., L is perfectly substitutable to C and vice-versa.

(c) The technology applied in the production process is given or constant.

(d) The substitution of one input for the other leaves the output unaffected.

Q18. Explain the characteristics of an isoquants.

Ans :

1. Downward sloping

Isoquants are downward sloping curves because, if one input increases, the other one reduces. There is no question of increase in both the inputs to yield a given output. A degree of substitution is assumed between the factors of production. In other words, an isoquant cannot be increasing, as increase in both the inputs does not yield same level of output. If it is constant, it means that the output remains constant though the use of one of the factors is increas-ing, which is not true. Isoquants slope from left to right.

2. Convex to origin

Isoquants are convex to the origin. It is because the input factors are not perfect substitutes. One input factor can be

substituted by other input factor in a 'diminishing marginal rate'i If the input factors were perfect substitutes, the isoquant would be a falling straight line. When the inputs are used in fixed proportion, and substitution of one

C input for the other cannot take place, the isoquant will be L shaped.

3. Do Not Intersect

Two isoproducts do not intersect with each other. It is because, each of these denote a particular level of outpumFig. 5.3(c)). If the manufacturer wants to operate at a higher level of output, he has to switch over to another isoquant with a higher level of output and vice versa.

4. Do not touch axes

The isoquant touches neither X-axis nor Y-axis, as both inputs are required to produce a given product.

3.7.1 Types of Isoquants

Q19. Discuss about the various types of isoquants.

Ans :

From the properties of isoquants it is clear that the shape of an isoquant is convex to the origin. The shape of an isoquant however depends upon the degree of substitutability between the inputs in a production function. Economists observed that the convex shape of an isoquant is due to continuous substitutability between labour and capital but at the diminishing rate and said that the degree of substitutability between L and C gave rise to other three types of isoquants.

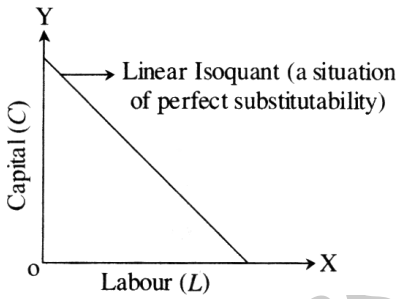
(i) Linear isoquant.

(ii) Fixed input-proportion/L-shaped/Input-output/ Leontief isoquant.

(iii) Kinked/Linear programming isoquant.

(i) Linear Isoquant

An isoquant is said to be a linear isoquant when there exists prefect substitutability between two inputs Labour (L) and Capital (C). This case of an isoquant indicates that a given quantity of output is produced by using capital only or only labour or by using a larger number of combinations of both labour and capital. A linear isoquant also implies that the Marginal Rate of Technical Substitution (MRTS) between L and C is constant. The following figure (1) gives the shape of a linear isoquant.



Figure

The mathematical form of a production function exhibiting perfect substitutability is as follows.

The production function,

Q = f(L, C)

Where,

Q = Quantity of output produced

L = Labour units

C = Capital employed.

Then production function exhibiting perfect substitutability is,

Q = aC + bL

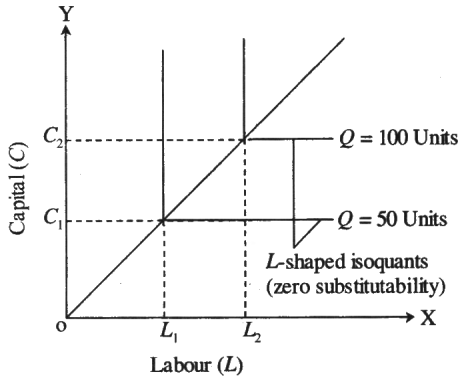
Where,

a, b = Attributes The slope of isoquant from this production function is (– b/a).

(ii) Fixed input-proportion/L-shaped/Input-output/ Leontief isoquant.

When there is a fixed proportion between the inputs labour (L) and capital (C) then the production function takes 'L' shape. Such an isoquant implies zero substitutability between the inputs or perfect complementarily between the inputs. The state of perfect complementarity/zero substitutability means that a given quantity of output can be produced by one and only one combination

of labour and capital and that the proportion of input is fixed. This also mean that if the quantity of one inputs is increased and the quantity of the other input is kept constant, there is no change in the output. The output can be increased by increasing both the inputs proportionately. The figure shows a L- shaped isoquant.



Figure

A L-shaped isoquant is also called as a Leontief function which is given by,

Q = min (aC, bL)

Where,

Q = Quantity of the output produced

a,b = Attributes

C = Capital employed

L = Labour units

min = Refers that output (Q) equals the least value of the two terms aC and bL.

Note

(a) If aC > bL, Q = bL and if bL > aC then Q = aC.

(b) If aC = bL, it means that both the inputs L and C are fully utilised.

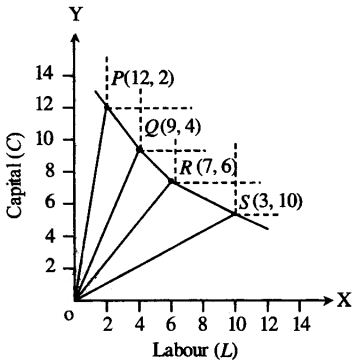
(c) Fixed capital total ratio K/L = b/a.

(iii) Kinked/Linear programming isoquant.

An isoquant is said to be a kinked isoquant when there is a limited substitutability between the inputs, labour (L) and capital (C). As there are only few production techniques for producing a commodity or a product, substitutability of inputs is possible at only kinks. For example, let us consider four different production techniques for producing an output (Q). Each techniques uses a fixed- input proportion as shown below.

S.No.	Production Technique	Capital (C)	Labour (L)	Capital/Labour ratio (C/L)
1.	OP	12	2	2:2
2.	OQ	9	4	9:4
3.	OR	7	6	7:6
4.	OS	3	10	3 : 10

The above four production techniques (OP, OQ, OR and OS) are represented graphically as,



Figure

In the figure the ray 'OP' represents the production technique with input proportion 12C: 2L. Similarly the other three techniques (OQ, PR, OSh have the input proportion as 9C:4L, 1C:6L and 3C:10L respectively. By joining the points P, Q, R, S we get a kinked isoquant, PQRS. Each point on the kinked isoquant represents a combination of Capital (C) and Labour (L) required to produce an output (Q).

The kinked isoquant is basically used in linear programming and therefore, it is also called as 'linear programming isoquant' or 'activity analysis isoquant'.

3.8 ISO COST CURVES

Q20. Define and explain isocost curve with the help of isocost diagrams.

Ans : **(Dec.-16)**

Isocost refers to that cost curve which will show the various combinations of two inputs which can be purchased with a given amount of total money.

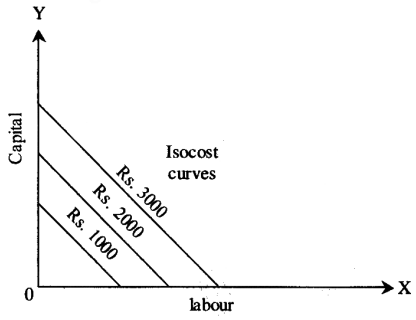


Figure (1): Isocosts Each Showing Different Level of Total Cost

In the above figure (1) it can be seen that as the level of production changes. The total cost will change and automatically the isocost curve moves upward.

We can easily superimpose the isocost diagram on the isoquant diagram (as the axes in both the cases represent the same variable) with the help of the following figure (2).

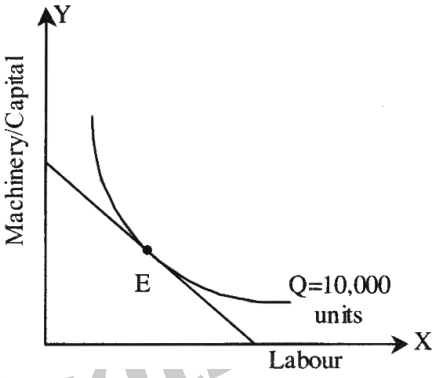


Figure (2): Super imposition of Isocost and Isoquant Curve

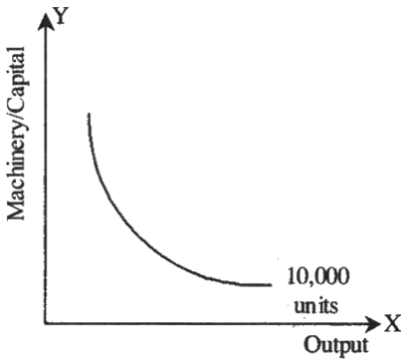


Figure (3): Isoquant Showing 10,000 Units of Production

We can ascertain the maximum output for a given outlay, say 1000. This maximum output which is possible with this outlay cost, is represented by the isoquant tangent to the isocost curve. The optimum combination of inputs is represented by the point of intersection E.

The point of tangency E on the isoquant curve represents the least-cost combination of inputs, yielding maximum level of output.

Q21. What do you understand by Marginal Rate of Technical Substitution (MRTS).

Ans :

Marginal Rate of Technical Substitution (MRTS)

Marginal Rate of Technical Substitution (MRTS) evaluates the decrease in per unit of one input leading to increase in the other input which is adequate for maintaining the same level of output. Hence, for having the same quantity of output, the marginal rate of technical substitution of labour (L) for capital (K) ($MRTS_{LK}$) will be the amount of capital which the firm desires to give up for an additional unit of labour. In the same way, the marginal rate of technical substitution of capital for labour ($MRTS_{KL}$) will be the amount of labour which the firm desires to give up for an additional unit of capital.

MRTS can be expressed as the ratio between the rates of change in L and K, down the isoquant.

$$MRTS_{LK} = -\frac{\Delta K}{\Delta L}$$

MRTS of labour for capital is equal to both the slope of the isoquant and the ratio of the marginal product of one input to the marginal product of other input. As output along an isoquant is constant, if ΔL units of labour are substituted for ΔK units of capital, then an increase in output due to increase in ΔL ($\Delta L \times MP_L$) must coordinate with the decrease in output due to decrease in ΔK ($-\Delta K \times MP_K$). It is also expressed as,

$$\Delta L \times MP_L = \Delta K \times MP_k$$

OR

$$\frac{MP_L}{MP_K} = -\frac{\Delta K}{\Delta L}$$

A change in the level of output can be written as the change in total output (ΔQ) equals to the sum of change in labour input (ΔL) times MP of labour and change in capital input (ΔK) times. MP of capital. It can also be expressed as,

$$\Delta Q = MP_L \times \Delta_L + MP_k \times \Delta K$$

It output remains constant in isoquant i.e., $\Delta Q = 0$, then we have,

$$MP_L DL + MP_K \Delta K = 0$$

$$\frac{MP_L}{MP_k} = \frac{-\Delta K}{\Delta L} \Rightarrow MRTS_{LK} = \frac{MP_L}{MP_K}$$

Hence, the MRTS between two inputs is similar to the ratio of the marginal physical products of the inputs.

Example

Combination	Capital	Labour	Output (units)
A	1	15	10,000
B	2	10	10,000
C	3	6	10,000
D	4	3	10,000

It is assumed in the above table that an output of 10,000 units can be obtained either by applying 1 unit of capital and 15 units of labour or by employing 2 units of capital and 10 units of labour. This means in different combinations of inputs, the capital can be substituted for labour and yet the same output can be obtained.

Short Question & Answers

1. What do you understand by production?

Ans :

Production is an activity of transforming the inputs into output. It involves step-by-step conversion of one form of materials into another form through chemical or mechanical processing in order to create or enhance the utility or usability of the products or services.

Economics view production is as an activity through which utility for a product is created or enhanced. According to E.S. Buffa, "Production is an process by which goods and services are created". In economics, the term production means a process in which the resources are transformed or converted into a different and more useful commodity or service. In general production means transforming inputs into an outputs. The term production is however limited to "manufacturing organizations" only.

Production i.e., transformation of inputs into output can be any of the three forms change in form, change in phase and change in time. The output produced can be either the final product (like a PC) or an intermediate product (like a semiconductor used in manufacturing a PC). The output goods or services may be either tangible or intangible. Production of a chair from wood is a tangible output whereas medical service by a doctor is an intangible output. The figure indicates the production process.

2. Define production function?

Ans :

The production function is purely a relationship between the quantity of output obtained or given out by a production process and the quantities of different inputs used in the process. Production function can take many forms such as linear function or cubic function etc.

Definition of Production Function

"Production Function" is that function which defines the maximum amount of output that can be produced with a given set of inputs.

– Michael R Baye

"Production Function" is the technical relationship, which reveals the maximum amount of output capable of being produced by each and every set of inputs, under the given technology of a firm.

- Samuelson

From the above definitions, it can be concluded that the production functions is more concerned with physical aspects of production, which is an engineering relation that expresses the maximum amount of output that can be produced with a given set of inputs.

Production function enables production manager to understand how better he can make use of technology to its greatest potential.

Mathematically, a production function is represented as,

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

Where,

Q = Quantity of the output produced

f = Function of L, C, M

L = Labour units

C = Capital employed

M = Machinery raw materials.

3. Importance of production function.

Ans :

1. Production function shows the maximum output that can be produced by a specific set of combination of input factors.
2. There are two types of production function, one is short-run production function and the other is long-run production function. The short-run production explains how output

change is relation to input when there are some fixed factors. Similarly, long run production function explains the behaviors of output in relation to input when all inputs are variable.

3. The production function explains how a firm reaches the most optimum combination of factors so that the unit costs are the lowest.

4. Production function explains how a producer combines various inputs in order to produce a given output in an economically efficient manner.

5. The production function helps us to estimate the quantity in which the various factors of production are combined.

4. Cobb Douglas production function.

Ans :

Cobb and Douglas put forth a production function relating output in American manufacturing industries from 1899 to 1922 to labour and capital inputs. They used the following formula:

$$P = bL^{a} C^{1-a}$$

Where P is total output,

L = The index of employment of labour in manufacturing

C = Index of fixed capital in manufacturing

The exponents a and 1-a are the elasticities of production. These measure the percentage response of output to percentage changes in labour and capital respectively.

The function estimated for the USA by Cobb and Douglas is

$$P = 1.01L^{0.75} C^{0.25}$$

$$R^2 = 0.9409$$

The production function shows that one percent change in labour input, capital remaining the same, is associated with a 0.75 percent change in output. Similarly, one percent change in capital, labour remaining the same, is associated with a 0.25 percent change in output. The coefficient of determination (R^2) means that 94 percent of the variations on the dependent variable (P) were accounted for by the variations in the independent variables (L and C). It indicates constant returns to scale which means that there are no economies or diseconomies of large scale of production. On an average, large or small scale plants are considered equally profitable in the US manufacturing industry, on the assumption that the average and marginal production costs were constant.

5. Criticisms of Cobb-Douglas production function.

Ans :

1. The function includes only two factors and neglects other inputs.
2. The function assumes constant returns to scale.
3. There is the problem of measurement of capital which takes only the quantity of capital available for production.
4. The function assumes perfect competition in the factor market which is unrealistic.
5. It does not fit to all industries.
6. It is based on the substitutability of factors and neglects complementarily of factors.
7. The parameters cannot give proper and correct economic implication.

6. Law of variable proportion.

Ans :

Law of variable proportions has a great significance in economic theory. This law examines the production function with one factor (input) variable by keeping the other factors (inputs) fixed. In the true sense, it refers to the relation between input and the output when the output is increased by varying the quantity of one input.

The Law of Variable Proportions is the new name for the famous 'Law of Diminishing Returns' of classical economics which played a vital role in the history of economic thought and occupies an equally important place in modern economic theory.

According to G. Stigler "As equal increments of one input are added, the inputs of other productive service being held constant, beyond a certain point the resulting increments of product will decrease i.e., the marginal products will diminish".

7. Assumptions of law variable proportion.

Ans :

i) The technology used in the production process should be constant. If the state of the technology used is increased, the Marginal Product (MP) and Average Product (AP) will rise instead of diminishing.

ii) The quantity of some of the inputs should be fixed. By doing so, the input proportions can be altered and their effect on the output can be known.

iii) The law does not hold in the situation where all the inputs are proportionately varied.

iv) The law is based on the possibility of varying the proportion in which various inputs can be combined to produce a product. The law is not applicable to those cases where the inputs must be used in fixed proportions to yield a product.

8. Applications of the law of variable proportion.

Ans :

The law of variable proportions is universal as it applies to all fields of production. This law applies to any field of production where some factors are fixed and others are variable. That is why it is called the law of universal application.

The main cause of application of this law is the fixity of any one factor. Land, mines, fisheries, and house building etc. are not the only examples of fixed factors. Machines, raw materials may also become fixed in the short period. Therefore, this law holds good in all activities of production etc. agriculture, mining, manufacturing industries.

1. Application to Agriculture

With a view of raising agricultural production, labour and capital can be increased to any extent but not the land, being fixed factor. Thus when more and more units of variable factors like labour and capital are applied to a fixed factor then their marginal product starts to diminish and this law becomes operative.

2. Application to Industries

In order to increase production of manufactured goods, factors of production has to be increased. It can be increased as desired for a long period, being variable factors. Thus, law of increasing returns operates in industries for a long period. But, this situation arises when additional units of labour, capital and enterprise are of inferior quality or are available at higher cost.

As a result, after a point, marginal product increases less proportionately than increase in the units of labour and capital. In this way, the law is equally valid in industries.

9. Returns to Scale.

Ans :

In the long run all factors of production are variable. No factor is fixed. Accordingly, the scale of production can be changed by changing the quantity of all factors of production.

Definition

"The term returns to scale refers to the changes in output as all factors change by the same proportion."

Koutsoyiannis

"Returns to scale relates to the behaviour of total output as all inputs are varied and is a long run concept".

10. Increasing Returns to Scale.

Ans :

This law states that the volume of output keeps on increasing with every increase in the inputs. Where a given increase in inputs leads to a more than proportionate increase in the output, the law of increasing returns to scale is said to operate. We can introduce division of labour and other technological means to increase production. Hence, the total product increases at an increasing rate.

"An increase of labour and capital leads generally to improved organisation which increases the efficiency of the work of labour and capital. Therefore, an increase of labour and capital generally gives a return which increases more than in proportion."

"As the proportion of one factor in a combination of factors is increased, upto a point, the marginal productivity of the factor will increase."

11. Define isoquant.

Ans :

The term isoquant has its origin from two words 'ifso' and 'quantus'. 'iso' is a Greek word meaning 'equal' and 'quantus' is a Latin word meaning 'quantity'. An isoquant curve is therefore called as 'iso-product curve' or 'equal-product curve' or 'production indifference curve'.

Definition

According to Peterson "An Iso-quant curve may be defined as a curve showing the possible combinations of two variable factors that can be used to produce the same total product."

According to Ferguson "An Iso-quant is a curve showing all possible combinations of inputs physically capable of producing a given level of output."

An isoquant is defined as the curve or locus of points representing various combinations of two inputs [say Labour (L) and Capital (C)] that yield the same level of output.

12. Assumptions of Isoquant curves.

Ans :

Assumptions

An isoquant curve is generally drawn on the basis of the following assumptions.

(a) An isoquant curve has only two inputs say labour (L) and capital (C) to produce an output (Q).

(b) The two inputs are perfectly substitutable to each other but at a diminishing rate i.e., L is perfectly substitutable to C and vice-versa.

(c) The technology applied in the production process is given or constant.

(d) The substitution of one input for the other leaves the output unaffected.

13. Isocost curve.

Ans :

Isocost refers to that cost curve which will show the various combinations of two inputs which can be purchased with a given amount of total money.

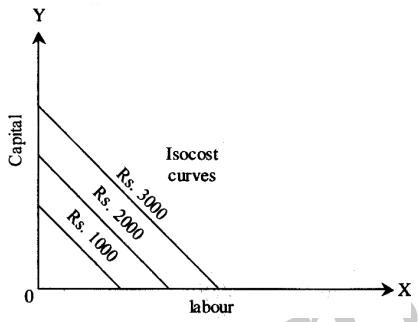


Figure (1): Isocosts Each Showing Different Level of Total Cost

In the above figure (1) it can be seen that as the level of production changes. The total cost will change and automatically the isocost curve moves upward.

14. Marginal Rate of Technical Substitution.

Ans :

Marginal Rate of Technical Substitution (MRTS) evaluates the decrease in per unit of one input leading to increase in the other input which is adequate for maintaining the same level of output. Hence, for having the same quantity of output, the marginal rate of technical substitution of labour (L) for capital (K) ($MRTS_{LK}$) will be the amount of capital which the firm desires to give up for an additional unit of labour. In the same way, the marginal rate of technical substitution of capital for labour ($MRTS_{KL}$) will be the amount of labour which the firm desires to give up for an additional unit of capital.

MRTS can be expressed as the ratio between the rates of change in L and K, down the isoquant.

15. Ridgeline

Ans :

The ridge lines are the locus of points of isoquants where the marginal products (MP) of

factors are zero. The upper ridge line implies zero MP of capital and the lower ridge line implies zero MP of labour. Production techniques are only efficient inside the ridge lines. The marginal products of factors are negative and the methods of production are inefficient outside the ridge lines.

16. Product differentiation

Ans :

Product differentiation is a marketing strategy that strives to distinguish a company's products or services from the competition. Successful product differentiation involves identifying and communicating the unique qualities of a company's offerings while highlighting the distinct differences between those offerings and others on the market. Product differentiation goes hand-in-hand with developing a strong value proposition to make a product or service attractive to a target market or audience.

17. Marginal product

Ans :

In the long run, a firm can vary the amounts of factors which it uses for the production of goods. It can choose what technique of production to use, what design of factory to build, what type of machinery to buy. The profit maximization will obviously want to use that mix of factors of combination which is least costly to it. In search of higher profits, a firm substitutes the factor whose gain is higher than the other.

When the last rupee spent on each factor brings equal revenue, the profit of the firm is maximized. When a firm uses different factors of production or least cost combination or the optimum combination of factors is achieved.

18. Average product

Ans :

Average product may be defined as the Total Product (TP) per unit of variable input. If the variable input 'L' is considered, average product is,

$$AP_L = \frac{TP}{L}$$

Where,

AP_L = Average product of labour.

TP = Total product.

L = Labour units.

Choose the Correct Answers

1. The third stage of law of variable proportions is called as [b]
   (a) Stage of decreasing returns (b) Stage of negative returns
   (c) Stage of increasing returns (d) Stage of positive returns.
2. The meaning of the term ISOQUANT is [a]
   (a) Equal quantity (b) Unequal quantity
   (c) Higher quantity (d) Lower quantity.
3. Which of the following option does not come under the types of Isoquants [b]
   (a) Linear isoquant (b) Variable input-proportion isoquant
   (c) Fixed input-proportion isoquant (d) Kinked isoquant.
4. Which of the following indicates the marginal product of a variable input? [c]
   (a) Total product multiplied by the number of units produced
   (b) Additional output from each input
   (c) The additional output resulting from one unit increase in the variable input
   (d) The ratio of the amount of the variable input and fixed input.
5. What do decreasing returns imply? [c]
   (a) Increasing marginal product curve (b) Increasing average product curve
   (c) Decreasing marginal product curve (d) Constant total product curve
6. The long run, as Economists describe, means [a]
   (a) When all the factors of production are variable and firms are free to leave or enter the industry.
   (b) A period where the law of diminishing returns holds good.
   (c) A period where there are no variable inputs.
   (d) all inputs are fixed in supply.
7. Which of the following is not correct? [c]
   (a) When the total product is rising, average and marginal product may be either rising or falling.
   (b) When marginal product is negative, total product and average product are falling.
   (c) When marginal product is at maximum, average product is more than marginal product and total product is falling.
   (d) When average product is at maximum, marginal product equals average product, and total product is rising.

8. The difference between long run and short run is that [c]

(a) In the short run all the inputs are fixed where as in the long run, all the inputs are variable.

(b) In the short run, the firm can change all of its inputs and in the long run, it cannot change the same.

(c) In the short run, at least one of the firm's input levels is fixed where as in the long run, every input is variable.

(d) In the long run, the firm is forced to use its fixed assets efficiently.

9. Production function is defined as [c]

(a) The relationship between the market price and the quantity exported.

(b) The relationship between the firm's total revenue and total costs.

(c) The relationship between the quantities of inputs needed to produce a given volume of output at a given level of technology.

(d) The relationship between the quantity of inputs and the firm's variable cost of production.

10. The isocosts and isoquants are used to determine the input usage that [d]

(a) Maximises the cost of production. (b) Minimises the cost of production.

(c) Extends the cost of production. (d) Eliminates the cost of production.

11. The producer has to manufacture product at: [b]

(a) Higher cost to attain profits. (b) Lower cost to attain profits.

(c) Neutral cost to attain profits. (d) Marginally higher cost to attain profits.

Fill in the Blanks

1. _____ transformation of inputs into output can be any of the three forms change in form, change in phase and change in time.
2. _____ is the human input into production
3. _____ production function is most popular in empirical research.
4. _____ combination refers to the combination of factors with which a firm can produce a specific quantity of output at the lowest possible cost.
5. An _____ line indicates all possible combinations of two inputs which can be purchased with a given amount of investment fund.
6. _____ is defined as the change in the Total Product (TP) per unit change in a variable input.
7. _____ is the amount of output that is produced by using different quantities of inputs.
8. Law of variable proportion is also known as _____ .
9. _____ refers to the changes in output as all factors change by the same proportion.
10. isoquant curve is also known as

ANSWERS

1. Production
2. Labour
3. Cobb-Douglas
4. Optimum factor
5. Iso-cost
6. Marginal product
7. Total product
8. Law of Diminshing Return
9. Returns to Scale
10. iso product curve

UNIT IV

Budget Line : Cost Concepts, Cost Classification, CVP Analysis, Short Run Cost Curves and Long Run Cost Curves, Experience Curve. Economies and Diseconomies to the Scale, Economies of Scope

4.1 Budget Line

Q1. What do you understand by budget line?

Ans : **(Dec.-16)**

Definition

The Budget Line, also called as Budget Constraint shows all the combinations of two commodities that a consumer can afford at given market prices and within the particular income level.

We know that the higher the indifference curve, the higher is the utility, and thus, utility maximizing consumer will strive to reach the highest possible Indifference curve. But, he has two strong constraints: limited income and given the market price of goods and services. The income in hand is the main constraint (budgetary) that decides how high a consumer can go on the indifference map. In a two commodity model, the budgetary constraint can be expressed in the form of the budget equation:

$$P_x . Q_x + P_y . Q_y = M$$

Where,

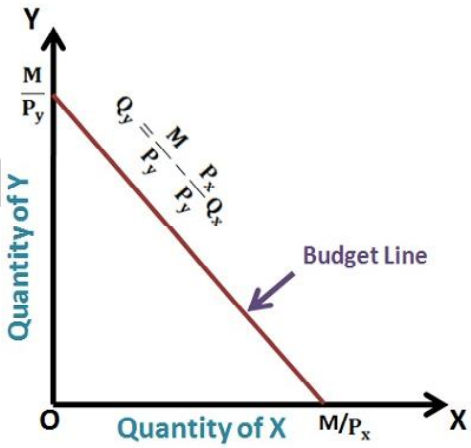
P_x and P_y are the prices of commodity X and Y and Q_x, and Q_y is their respective quantities.

M = consumer's money income

The Budget equation states that the consumer's expenditure on commodity X and Y cannot exceed his money income (M). Thus, the quantities of commodities X and Y that a consumer can buy from his income (M) at given prices Px and P_y can be calculated through the budget equation given below:

$$Q_x = \frac{M}{P_x} - \frac{P_y}{P_x} Q_y$$

$$Q_y = \frac{M}{P_y} - \frac{P_x}{P_y} Q_x$$



The values of Q_x and Q_y are plotted on the X and Y axis, and a line with a negative slope is drawn connecting the points so obtained. This line is called the budget line or price line.

4.2 Cost Concepts

Q2. Define cost? What are the determinants of cost?

Ans :

Cost is the all monetary expenses incurred by the manufacturer to produce a goods or services. In a business where selling and distribution expenses are quite nominal the cost of an article may be calculated without considering the selling and distribution overheads. At the same time, in a

business where the nature of a product requires heavy selling and distribution expenses, the calculation of cost without taking into account the selling and distribution expenses may prove very costly to a business. The cost may be factory cost, office cost, and cost of sales and even an item of expense. For example, prime cost includes expenditure on direct materials, direct labor and direct expenses. Money spent on materials is termed as cost of materials just like money spent on labor is called cost of labor and so on. Thus, the use of term cost without understanding the circumstances can be misleading.

Meaning of Cost

Cost refers to the expenditure of funds or use of property to acquire or produce a product or service. It also refers all monetary expenses incurred by the manufacturer to produce a goods or services.

Economist define cost in terms of opportunities that are sacrifice when choice is made.

Cost is analyzed from the producer point of view. Cost estimates are made in terms of money cost calculations are indispensable for management decisions.

Cost of production refers to the total money expenses (both explicit and implicit) incurred by the producer in the process of transforming inputs into outputs.

Thus, it refers total money expenses incurred to produce a particular quantity of output by the producer.

Determinants of Cost

The cost of production of goods and services depends on various input factors used by the organization and it differs from firm to firm. The major cost determinants are:

1. **Level of Output :** The cost of production varies according to the quantum of output. If the size of production is large then the cost of production will also be more.
2. **Price of input Factors :** A rise in the cost of input factors will increase the total cost of production.
3. **Productivities of Factors of Production:** When the productivity of the input factors is high then the cost of production will fall.
4. **Size of Plant :** The cost of production will be low in large plants due to mass production with mechanization.
5. **Output Stability :** The overall cost of production is low when the output is stable over a period of time.
6. **Lot Size :** Larger the size of production per batch then the cost of production will come down because the organizations enjoy economies of scale.
7. **Laws of Returns :** The cost of production will increase if the law of diminishing returns applies in the firm.
8. **Levels of Capacity Utilization :** Higher the capacity utilization, lower the cost of production
9. **Time Period :** In the long run cost of production will be stable.
10. **Technology :** When the organization follows advanced technology in their process then the cost of production will be low.
11. **Experience :** over a period of time the experience in production process will help the firm to reduce cost of production.
12. **Process of Range of Products :** Higher the range of products produced, lower the cost of production.
13. **Supply Chain and Logistics :** Better the logistics and supply chain, lower the cost of production.
14. **Government Incentives :** If the government provides incentives on input factors then the cost of production will be low.

Q3. Define cost function.

Ans :

Cost function express the relationship between cost and its determinants such as the size of plant, level of output, input prices, technology, managerial efficiency, etc. In a mathematical form, it can be expressed as,

$$C = f(S, O, P, T, E....)$$

Where,

C = Cost (it can be unit cost or total cost).

S = Size of plant.

0 = Level of output.

P = Price of inputs.

T = Nature of technology.

E = Managerial efficiency.

Q4. Explain the importance of cost analysis in managerial decision making.

Ans :

The uses of cost analysis in managerial decision-making are as follows:

1. Product Costing and Pricing Decisions

Cost analysis is used in managerial decision-making is in setting product or services prices. Different pricing approaches are used by business organizations, which include cost-based pricing, market-based pricing, target pricing, and others. Also, business organizations are likely to adopt diverse pricing strategies. When a firm is faced with highly price-sensitive customers can reduce its unit costs by spreading its fixed costs over a high volume of output to allow it to use penetration pricing strategy to achieve its profit maximization objective.

2. Costs Management

Managers face diverse problems in running their organizations, some internal and others external in nature. Selling prices tend to become inflexible, employees get organised and demand higher wages and other benefits, taxes increase, and governments impose new regulations. As a result of these and other factors, managers soon realise that costs must be controlled and reduced if continuous profits were to be earned.

3. Profit Planning

Cost analysis is indispensable to profit planning. Profit planning involves the determination of operating plan of a business organization for the coming operating period and summarising it in financial presentations in the form of projected income statement. Costs are one of the major inputs in profit planning and cost analysis in profit planning helps management to understand the relationship of cost, volume and profit and finally decide on the optimal operational activity level.

4. Capital Investment Decisions

It basically examine two major items, namely benefits and costs. Thus, analysis of both the benefits and the costs are made and such analysis is commonly called cost-benefit analysis. The benefits are most often received overtime. Cost-benefit analysis can be carried-out using only financial costs and financial benefits.

5. Marketing Decisions

Cost analysis from the viewpoint of marketing decision provides useful information needed to plan and control marketing costs and to devise appropriate marketing strategies for selling products based on their contribution margins to the total company profit. Cost analysis relates the cost of marketing activities to sales revenues. A profit or loss statement must be constructed for any marketing component being analysed. The approach consists of dividing the firm's costs into their functional categories. The functional category amounts are then assigned within the appropriate marketing classifications.

4.3 COST CLASSIFICATION

Q5. Discuss briefly the different cost concepts relavant to managerial decision on planning and control.

Ans : **(Dec.-20, Dec.-19, Dec.-18, Dec.-16, Imp.)**

There are several costs that a firm should consider under relevant circumstances. It is quite essential for a firm to understand the difference between various cost concepts for the purpose of production/business decision making. The following are the various cost concepts/types of costs.

(A) Actual Cost

Actual cost is defined as the cost or expenditure which a firm incurs for producing

or acquiring a good or service. The actual costs or expenditures are recorded in the books of accounts of a business unit. Actual costs are also called as "Outlay Costs" or "Absolute Costs" or "Acquisition Costs".

Examples, Cost of raw material, Wage bill etc.

(B) Opportunity Cost

Opportunity cost is concerned with the cost of forgone opportunity/alternatives. In other words, it is the return from the second - best use of the firms resources which the firm forgoes in order to avail of the return from the best use of resources. It can also be said as the comparison between the policy that was chosen and the policy that was rejected.

The concept of opportunity cost focuses on the net revenue that could be generated in the next best use of a scarce input. Opportunity cost is also called as "Alternative Cost".

Examples, If a firm owns a land, there is no cost of using the land (i.e., the rent) in the firm's account. But the firm has an opportunity cost of using this land, which is equal to the rent forgone by not letting the land out on rent.

(C) Sunk Cost

Sunk costs are those do not alter by varying the nature or level of business activity. Sunk costs are generally not taken into consideration in decision-making as they do not vary with the changes in the future. Sunk costs are a part of the outlay/actual costs. Sunk costs are also called as "non-avoidable costs" or "non-escapable costs".

Examples, All the past costs are considered as sunk costs. The best example is amortization of past expenses, like depreciation.

(D) Incremental Cost

Incremental costs are additions to costs resulting from a change in the nature or level of a business activity. As these costs can be avoided by not bringing any variation in the activity, they are also called as "Avoidable costs" or "Escapable costs". Moreover incremental costs can be considered as the difference in the total costs resulting from a contemplated change in the future, they are also called as "differential costs".

Examples, Change in distribution channels adding or deleting a product in the product line, replacing a machine etc.

(E) Explicit Cost

Explicit costs are those expenses/expenditures that are actually paid by the firm. These costs are recorded in books of accounts. Explicit costs are important for calculating the profit and loss accounts and guide in economic decision-making. Explicit costs are also called as "Paid-out costs".

Examples, Interest payment on borrowed funds, rent payment, wages, utility expenses etc.

(F) Implicit Cost or Imputed Costs

Implicit costs are a part of opportunity cost. They are the theoretical costs i.e., they are not recognized by the accounting system and are not recorded in the books of accounts but are very important in certain decisions. They are also called as the earnings of those employed resources which belong to the owner himself. Implicit costs are also called as "Imputed costs".

Examples, Rent on idle land, depreciation on fully depreciated property still in use, interest on equity capital etc.

(G) Book Costs

Book costs are those business costs which don't involve any cash payments but a provision is made in the books of accounts in order to include them in the profit and loss account and take tax advantages, like provision for depreciation and for unpaid amount of the interest on the owner's capital. Book costs are imputed costs or the payments made by the firm itself.

(H) Out-of-Pocket Costs

Out-of-pocket costs are those costs or expenses which are current payments to the outsiders of the firm. All the explicit costs fall into the category of out-of-pocket costs.

Examples, Rent payed, wages, salaries, interest, transport charges etc.

(I) Accounting Costs

Accounting costs are the actual or outlay costs that point out the amount of expenditure that has already been incurred on a particular process or on production as such accounting costs facilitate for managing the taxation needs and profitability (profit/loss) of the firm.

Examples, All sunk costs are accounting costs.

(J) Economic Costs

Economic costs are related to future. The play a vital role in business decisions as the costs considered in decision - making are usually future costs. They have the nature similar to that of incremental, imputed, explicit and opportunity costs.

(K) Direct Cost

Direct costs are those which have direct relationship with a unit of operation like manufacturing a product, organizing a process or an activity etc. In other words, direct costs are those which are directly and definitely identifiable. The nature of the direct cost depends upon the cost under consideration. As the direct costs are related with a particular product/process, they vary with variations in them. Therefore, all direct costs are variable in nature.

Examples, In operating railway services, the costs of wagons, coaches and engines are direct costs.

Direct costs are also called as "Traceable costs" or "Assignable costs". Direct cost play an important role in making decision that involve adding or deleting of a product from the product line, pricing of a product, product marketing and facilitate in finding the optimal cost in multiple product firms.

(l) Indirect costs

Indirect costs are those which cannot be easily and definitely identifiable in relation to a plant, a product, a process or a department. Like the direct costs indirect costs, do not vary i.e., they may or may not be variable in nature. However, the nature of indirect costs depend upon the costing under consideration.

Indirect costs are both the fixed and the variable type as they may or may not vary as a result of the proposed change in the production process etc. Indirect costs are also called as "Non-traceable costs" or "Non-avoidable costs".

Examples, The cost of factory building, the track of railway system etc., are 'fixed indirect costs' and the cost of machinery, labour etc. are 'variable indirect inputs'.

(M) Controllable Costs

Controllable costs are those which can be controlled or regulated through observation by an executive and therefore they can be used for assessing the efficiency of the executive. Most of the costs are controllable.

Example, Inventory costs can be controlled at the shop level etc.

(N) Non-Controllable Costs

The costs which cannot be subjected to administrative control and supervision are called non-controllable costs.

Examples, Costs due obselence and depreciation, capital costs etc.

(O) Historical Cost and Replacement Cost

Historical cost (original cost) of an asset refers to the original price paid by the management to purchase it in the past. Whereas replacement cost refers to the cost that a firm incurs to replace or acquire the same asset now. The distinction between the historical cost and the replacement cost result from the changes of prices over time. In conventional financial accounts, the value of an asset is sown at their historical costs but in decision-making the firm needs to adjust them to reflect price level changes.

Example, if a firm acquires a machine for Rs. 20,000 in the year 1990 and the same machine cost Rs. 40,000 now. The amount Rs.20,000 is the historical cost and the amount Rs.40,000 is the replacement cost.

(P) Shutdown Costs

The costs which a firm incurs when it temporarily stops its operations are called "shutdown costs". These costs can be saved when the firm again starts its operations. Shutdown costs include fixed costs, maintenance cost, lay-off experiences etc.

(Q) Abandonment Costs

Abandonment costs are those costs which are incurred for the complete removal of the fixed asset from use. These may occur due to obselence or due to improvisation of the firm. Abandonment costs thus involve problem of disposal of the asset.

(R) Urgent Costs and Postponable Costs

Urgent costs are those costs which have to be incurred compulsorily by the management in order to continue its operations. Examples are costs of material, labour, fuel, etc. If urgent costs are not incurred in time the operational efficiency of the firm falls.

Postponable costs are those which if not incurred in time do not effect the operational efficiency of the firm. Examples are maintenance costs.

(S) Business Cost and Full Cost

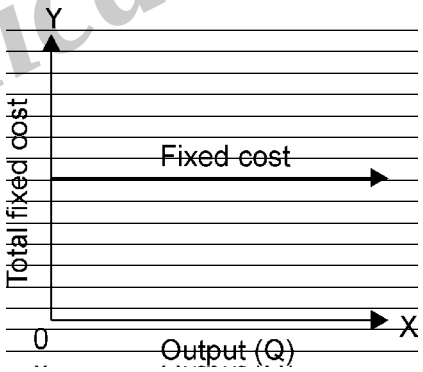
Business costs include all the expenses incurred by the firm to carry out business activities. According to Watson and Donald.S, business costs include all the payments and contractual obligations made by the firm together with the book cost of depreciation on plant and equipment. The concept of business cost facilitate in calculating the profit and loss account and for filing returns for income tax and also for other legal purposes.

Full costs include business costs, opportunity costs and normal profit. Opportunity cost is the expected return/earnings from the next best use of the firm's resources like capital, land and building, entrepreneurs/owners efforts and time. Normal profit is the necessary minimum earning in addition to the opportunity cost, which a firm must receive to remain in its present occupation.

(T) Fixed Costs

Fixed costs are the costs that do not vary with the changes in output. In other words, fixed costs are those which are fixed in volume though there are variations in the output level. If the time period under consideration is long enough to make the adjustments in the capacity of the firm, the fixed costs are vary. For an economist fixed costs are overhead costs and for an accountant they are indirect costs.

Examples : Expenditures on depreciation costs of administrative or managerial staff, rent on land and buildings, property taxes etc. Fixed cost assumes the shape as shown below,

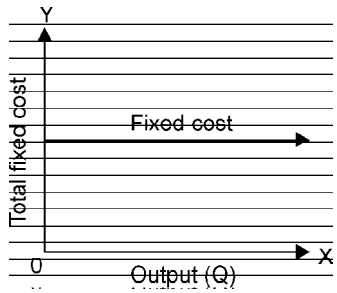


(U) Variable Costs

Variable costs are those that are directly dependent on the output i.e., they vary with the variation in the volume/level of output. Variable costs increase with an increase in output level but not necessarily in the same proportion. The proportionality between the variable cost and output depends upon the utilization of fixed facilities and resources during the production process.

Examples, Cost of raw materials, expenditure on labour, running cost or maintenance costs of fixed assets such as fuel, repairs, routine maintenance expenditure etc.

Variable cost assumes the shape shown below.



(V) Total Cost, Average Cost and Marginal Cost

Total Cost (TC) refers to the money value of the total resources/inputs required for the production of goods and services by the firm. In other words, it refers to the total outlays of money expenditure, both explicit and implicit, on the resources used to produce a given level output. Total cost includes both fixed and variable costs and is given by

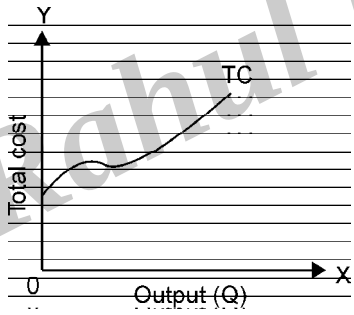
TC = VC + FC Where

TC = Total cost,

VC = Variable cost,

FC = Fixed cost

Total cost assumes the shape as shown below.



Average Cost (AC)

Refers to the cost per unit of output assuming that production of each unit of output incurs the same cost. It is statistical in nature and is not an actual cost. It is obtained by dividing Total Cost (TC) by total Output (Q)

$$\text{Average Cost (AC)} = \frac{TC}{Q}$$

TC = Total cost incurred in production process.

Q = Output level

Also AC = AFC + AVC

Where, AVC = Average Variable Cost.

Marginal Cost (MC)

Refers to the incremental or additional costs that are incurred when there is an addition to the existing output level of goods and services. In other words it is the addition to the Total Cost (TC) on account of producing additional units of the output. Marginal cost is given by

$$MC = TC_{(n+1)}$$
$$= TC_n$$

Where,

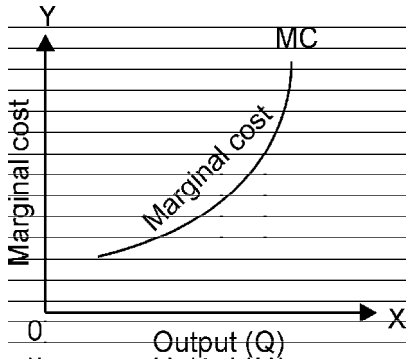
MC = Marginal cost

TC_n = Total cost before addition of units

$TC_{(n+1)}$ = Total cost after addition

n = Number of units of output.

Marginal cost assumes the shape as shown below,



(W) Short-run Cost and Long-run Cost : Both short-run and long-run costs are related fixed and variable costs and are often used in economic analysis.

Short-run Costs

These cost are which vary with the variations in the output with size of the firm as same. Short-run costs are same as variable costs. Broadly, short-run costs are associated with variable inputs in the utilization of fixed plant or other requirements.

Long-run Costs

These costs are which incurred on the fixed asserts like land and building, plant and machinery etc., Long-run costs are same as fixed costs. Usually, long-run costs are associated with the variations in size kind of plant.

(X) Average Fixed Cost, Average Variable Cost and Average Total Cost

1. Average Fixed Cost (AFC): Average fixed cost (AFC) is defined as the ratio of total fixed cost and the total number of units product/ output. Average fixed cost is given by,

$$AFC = \frac{TFC}{Q}$$

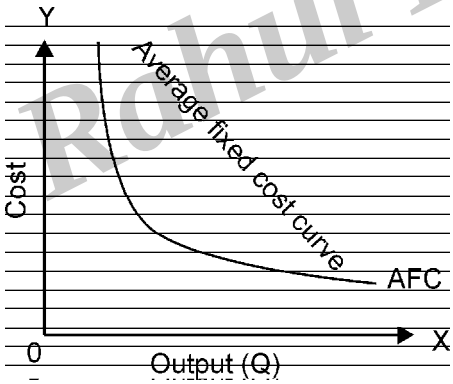
where,

AFC = Average Fixed Cost

TFC = Total Fixed Cost

Q = Output/number of units produced

The average fixed cost curve assumes the shape as follows



There exists an inverse relation between average fixed cost and the level of output produced. Greater the output, lower the average fixed cost and vice-versa. The inverse relation holds because the total fixed cost do not vary with the change in output.

2. Average Variable Cost (AVC): Average Variable Cost (AVC) is defined as the ratio of total variable cost and number of units produced or output level. Average variable cost is given by

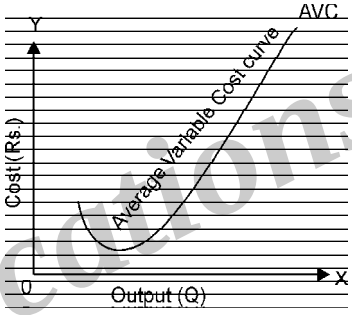
$$AVC = \frac{TVC}{Q}$$ Where,

AVC = Average variable cost

TVC = Total Variable cost

Q = Output/number of units produced.

Average variable cost assumes the shape as follow.



Average variable cost is considered in fixing the price of the product.

3. Average Total Cost (ATC) : Average Total Cost (ATC) is defined as ratio of total cost and number of units produced or output level. Average total cost is given by,

$$ATC = \frac{TC}{Q}$$

Where,

ATC = Average Total Cost

TC = Total cost

Q = Output/number of units produced

Also,

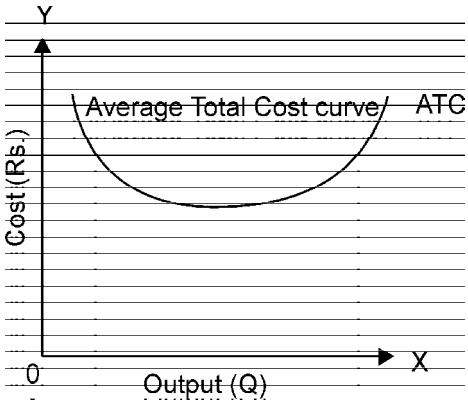
$$ATC = \frac{TFC + TVC}{Q}$$

Where,

TFC = Total Fixed Cost

TVC = Total Variable Cost

Average total cost curve assumes the shape as below.



Average total costs are generally called as Average Costs (*AC*)

$$AC = \frac{TC}{Q}$$ Where,

TC – Total Cost

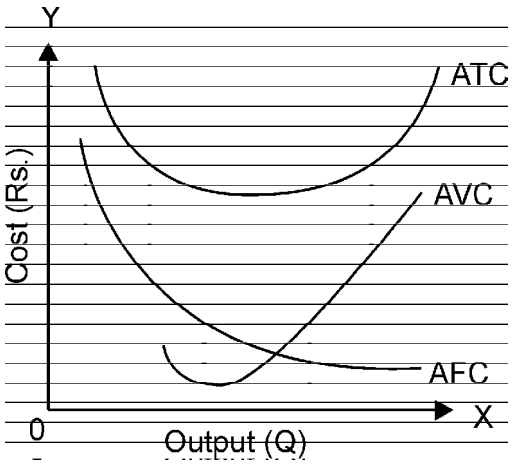
Q – Output

Relation Between ATC, AFC and AVC

$$ATC = \frac{TC}{Q}$$

$$ATC = \frac{TFC}{Q}$$

$$AVC = \frac{TVC}{Q}$$



Q6. What are the differences between fixed cost and variable cost.

Ans :

Comparison among Fixed Cost and Variable Cost

Basis	Fixed Cost	Variable Cost
Meaning	Fixed cost are those cost which are fixed in volume, even though if any variation exist in the output level.	Variable cost are those cost which are not constant and are directly depends on the output i.e., they vary in their variation at the level/volume of output.
Time period	Fixed cost relate to short-period only. The firm will not stop production if these costs remain uncovered.	Variable cost relate to both short and long period. The firm will stop production if these cost are not covered.
Factor of production	Fixed costs are those cost incurred on fixed factors of production like land, building, machines etc.	Variable cost are incurred on the employment of variable factors, such as labour, raw materials, transportation etc.
Relation of output with input	Fixed cost remain fixed at all level of output. These cost have to be incurred even when output is zero.	Variable cost go on rising the higher level of output. First, they rise at the diminishing rate and than at a constant rate and finally they increase at, an increasing rate.
Example	Rent, wages of permanent staff, license fee, cost of plant and machinery etc.	Cost of raw materials, wages of casual labour, expenses on electricity ery etc.

4.4 CVP Analysis

Q7. Define CVP Analysis. What are the objectives of CVP Analysis.

Ans :

Break-even Analysis refers to the study of cost-volume profit analysis. In the true sense, it refers to the analyisis of costs and their possible impact on revenues and volume of the firm. In other words break-even analysis is concerned with the determination of particular volume at which firm's cost will be equal to its revenue profits.

Break-even analysis can be viewed in two ways. First, in the broad sense, it refers to the study of the relationship between cost, volume and profit at different levels of sales or production. Second, in the narrow sense, it refers to a technique of determining the level of operations at which total revenues are equal to total expenses, i.e., the point of no profit or no loss. The point of no profit or no loss is determined as 'Break-even Point' (BEP). The main objective of Break-even analysis is to find out the BEP. The Break-0even point is obtained by the following formulas.

(i) Break-even Point (in units) $= \dfrac{\text{Fixed cost}}{\text{Selling price per unit} - \text{Variable cost per unit}}$

$= \dfrac{\text{Fixed cost}}{\text{Contribution per unit}}$ [$\therefore$ Contribution = Sales – Variable cost]

(ii) Break-even point (in sales) $= \dfrac{\text{Fixed cost}}{\text{Contribution}} \times \text{Sales} = \dfrac{\text{Fixed cost}}{\text{P/V Ratio}}$ $\left[\therefore \text{P/V Ratio} = \dfrac{\text{Contribution}}{\text{Sales}}\right]$

Cost-volume-profit (CVP) analysis is a key step in many decisions. CVP analysis involves specifying a model of the relations among the prices of products, the volume or level of activity, unit variable costs, total fixed costs, and the sales mix. This model is used to predict the impact on profits of changes in those parameters.

1. Contribution Margin

Contribution margin is the amount remaining from sales revenue after variable expenses have been deducted. It contributes towards covering fixed costs and then towards profit.

2. Unit Contribution Margin

The unit contribution margin can be used to predict changes in total contribution margin as a result of changes in the unit sales of a product. To do this, the unit contribution margin is simply multiplied by the change in unit sales. Assuming no change in fixed costs, the change in total contribution margin falls directly to the bottom line as a change in profits.

3. Contribution Margin Ratio

The contribution margin (CM) ratio is the ratio of the contribution margin to total sales. It shows how the contribution margin is affected by a given change in total sales. The contribution margin ratio is often easier to work with than the unit contribution margin, particularly when a company has many products. This is because the contribution margin ratio is denominated in sales, which is a convenient way to express activity in multi-product firms.

Objectives

The main objectives of cost-volume-profit analysis are given below :

(i) The CVP analysis may be used in determining the break-even-point.

(ii) Fixation of selling prices.

(iii) Selecting the suitable product/sales mix.

(iv) Profit planning and maintaining a desired level of profit.

(v) Determining the optimum level of activity.

(vi) Evaluating the performance.

(vii) Taking many other decisions involving alternative choices such as make or buy decision, accept or reject decisions etc.

Q8. State the uses of CVP Analysis.

Ans :

CVP analysis is the most important tool of profit planning due to close relationship between cost, volume and profit. It examines the sensitivity of profit to changes in volume, break-even and desired increase in output and sales to achieve budgeted profits. It has wide application in profit planning, cost control, performance evaluation and various other managerial decision areas like price fixation decision - selection of product mix, make or buy decision or a shutdown decisions etc. Some important uses of CVP analysis are as follows :

1. Make or buy decision

CVP analysis, generates information relevant for a make or buy decision by examining the variable cost, fixed cost and purchase price of a product.

2. Shutdown decisions

Determination of shutdown level of prices or output require examination of positive or negative contribution, avoidable fixed cost and shutdown costs and this is enabled by CVP analysis.

3. Introduction of a new product or product line

This involves segregation of costs into fixed and variable and also determination of short term, sustainability and long term profitability. CVP analysis is a valuable tool for this computation.

4. Profit forecasting

Once fixed cost, variable cost and selling price is known, a producer can forecast profit at different levels of output and sales. The expected level of output for a desired level of profit is ascertained by CVP analysis.

Besides the above CVP analysis finds its application in selecting the choice of technology, setting product priorities, optimizing use of scarce of resources etc.

Q9. What are the Assumptions and Limitations of CVP Analysis?

Ans :

Assumptions

CVP analysis is based on the following assumptions :

1. All costs are either fixed or variable
2. Semi-variable costs are not considered to exist
3. Fixed costs remain fixed over a period of time
4. Variable cost per unit remain constant
5. All costs and revenues are linear
6. Technology of production and productive efficiency remain unchanged.
7. The firm produces one product or a constant product wide

Limitations

CVP analysis is subject to following limitations :

1. It considers output as the only factor affecting costs but in reality costs are affected by inflation, efficiency and economic and political factors.
2. All costs cannot be segregated into fixed and variable cost which is a pre-requisite for CVP analysis.
3. Total fixed costs do not remain constant beyond certain ranges of activity levels but increase in a step like fashion.
4. CVP analysis assumes a particular sales mix to be constant but in reality sale mix changes with the change in demand.
5. It assumes that costs and sales can be predicted with certainty. However these variables are uncertain.

PROBLEMS

1. From the following information, calculate the break-even point in units and in sales value:

Output	3,000 units
Selling price per unit	` 30
Variable cost per unit	` 20
Total fixed cost	` 20,000

Sol :

$$\text{Break – Even point (in units)} = \frac{\text{Fixed cost}}{\text{Selling price per unit} - \text{Variable Cost}}$$

$$= \frac{20,000}{30-20} = \frac{20,000}{10}$$

$$= 2,000 \text{ units}$$

$$\text{Break – Even point (in sales value)} = \frac{\text{Fixed cost} \times \text{Sales}}{\text{Sales} - \text{Variable cost}}$$

Fixed Cost = ` 20,000 (given)

Sales = 3,000 × 30 = ` 90,000

Variable Cost = 3,000 × 20

= ` 60,000

$$\text{Hence, B.E.P. (in sales value)} = \frac{20,000 \times 90,000}{90,000 - 60,000}$$

$$= \frac{20,000 \times 90,000}{30,000} = \text{`}60,000$$

Otherwise, as the B.E.P. is 2000 units, break-even sale would be: 2,000 × 30 = 60,000

2. From the following particulars, calculate:

i) Break-even point in terms of sales value and in units.

ii) Number of units that must be sold to earn a profit of ` 90,000.

Fixed Factory Overheads Cost	**` 60,000**
Fixed Selling Overheads Cost	**` 2,000**
Variable Manufacturing Cost per unit	**` 12**
Variable Selling Cost per unit	**` 3**
Selling Price per unit	**` 24.**

Sol :

Break – Even Point

i) $= \frac{\text{Fixed Cost}}{\text{Selling Price per unit} - \text{Variable Cost per unit}}$

ii) Variable Cost per unit = ` 12 + 3 = ` 15

Total Fixed Cost = ` 60,000 + 12,000 = ` 72,000

B.E.P. $= \frac{72,000}{24-15}$ = ` 8,000 units

B.E.P.(in sales values) = 8,000 × 24 = `1,92,000

iii) Number of units that must be sold to earn profit of ` 90,000

$= \frac{\text{Fixed Cost + Profit}}{\text{Selling price per unit} - \text{Variable cost per unit}}$

$= \frac{72,000+90,000}{24-15} = \frac{1,62,000}{9}$ = 18,000 units

4.5 Short Run Cost Curves

Q10. Explain Cost-Output Relationship in the Short-Run .

Ans : **(May-18, Imp.)**

The cost concepts made use of in the cost behavior are Total cost, Average cost, and Marginal cost.

Total cost is the actual money spent to produce a particular quantity of output. Total Cost is the summation of Fixed Costs and Variable Costs.

TC = TFC + TVC

Up to a certain level of production Total Fixed Cost i.e., the cost of plant, building, equipment etc, remains fixed. But the Total Variable Cost i.e., the cost of labor, raw materials etc., vary with the variation in output. Average cost is the total cost per unit. It can be found out as follows:

AC = TC/Q

The total of Average Fixed Cost (TFC/Q) keep coming down as the production is increased and Average Variable Cost (TVC/Q) will remain constant at any level of output.

Marginal Cost is the addition to the total cost due to the production of an additional unit of product. It can be arrived at by dividing the change in total cost by the change in total output.

In the short-run there will not be any change in Total Fixed Cost. Hence change in total cost implies change in Total Variable Cost only.

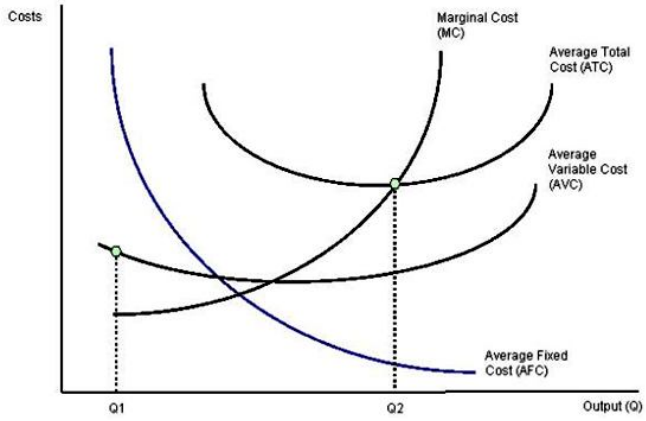
Units of Output	Total fixed cost TFC	Total variable cost TVC	Total cost (TFC + TVC) TC	Average variable cost (TVC/Q) AVC	Average fixed cost (TFC/Q) AFC	Average cost (TC/Q) AC	Marginal cost MC
0	-	-	60	-	-	-	-
1	60	20	80	20	60	80	20
2	60	36	96	18	30	48	16
3	60	48	108	16	20	36	12
4	60	64	124	16	15	31	16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

The above table represents the cost-output relationship. The table is prepared on the basis of the law of diminishing marginal returns. The fixed cost Rs. 60 May include rent of factory building, interest on capital, salaries of permanently employed staff, insurance etc. The table shows that fixed cost is same at all levels of output but the average fixed cost, i.e., the fixed cost per unit, falls continuously as the output increases. The expenditure on the variable factors (TVC) is at different rate. If more and more units are produced with a given physical capacity the AVC will fall initially, as per the table declining up to 3rd unit, and being constant up to 4th unit and then rising. It implies that variable factors produce more efficiently near a firm's optimum capacity than at any other levels of output and later rises.

But the rise in AC is felt only after the start rising. In the table 'AVC' starts rising from the 5th unit onwards whereas the 'AC' starts rising from the 6th unit only so long as 'AVC' declines 'AC' also will decline. 'AFC' continues to fall with an increase in Output. When the rise in 'AVC' is more than the decline in 'AFC', the total cost again begin to rise. Thus there will be a stage where the 'AVC', the total cost again begin to rise thus there will be a stage where the 'AVC' may have started rising, yet the 'AC' is still declining because the rise in 'AVC' is less than the drop in 'AFC'.

Thus the table shows an increasing returns or diminishing cost in the first stage and diminishing returns or diminishing cost in the second stage and followed by diminishing returns or increasing cost in the third stage.

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



In the above graph the "AFC' curve continues to fall as output rises an account of its spread over more and more units Output. But AVC curve (i.e. variable cost per unit) first falls and then rises due to the operation of the law of variable proportions. The behaviour of "ATC' curve depends upon the behaviour of 'AVC' curve and 'AFC' curve. In the initial stage of production both 'AVC' and 'AFC' decline and hence 'ATC' also decline. But after a certain point 'AVC' starts rising. If the rise in variable cost is less than the decline in fixed cost, ATC will still continue to decline otherwise AC begins to rise. Thus the lower end of 'ATC' curve thus turns up and gives it a U-shape. That is why 'ATC' curve are U-shaped. The lowest point in 'ATC' curve indicates the least-cost combination of inputs. Where the total average cost is the minimum and where the "MC' curve intersects 'AC' curve, It is not be the maximum output level rather it is the point where per unit cost of production will be at its lowest.

The relationship between 'AVC', 'AFC' and 'ATC' can be summarized up as follows:

If both AFC and 'AVC' fall, 'ATC' will also fall.

When 'AFC' falls and 'AVC' rises

'ATC' will fall where the drop in 'AFC' is more than the raise in 'AVC'.

'ATC' remains constant is the drop in 'AFC' = rise in 'AVC'

'ATC' will rise where the drop in 'AFC' is less than the rise in 'AVC'

4.6 Long Run Cost Curves

Q11. Explain Cost-Output Relationship in the Long-Run.

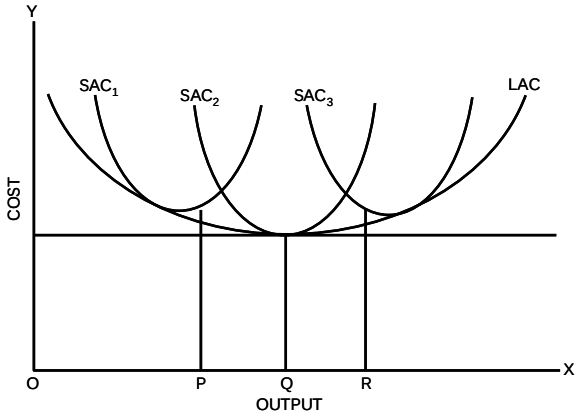
Ans : **(May.-19, Dec.-17, Imp.)**

Long run is a period, during which all inputs are variable including the one, which are fixes in the short-run. In the long run a firm can change its output according to its demand. 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.

The long-run cost-output relations therefore imply the relationship between the total cost and the total output. In the long-run cost-output relationship is influenced by the law of returns to scale.

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.

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



To draw on 'LAC' curve we have to start with a number of 'SAC' curves. In the above figure it is assumed that technologically there are only three sizes of plants – small, medium and large, 'SAC', for the small size, 'SAC2' for the medium size plant and 'SAC3' for the large size plant. If the firm wants to produce 'OP' units of output, it will choose the smallest plant. For an output beyond 'OQ' the firm wills optimum for medium size plant. It does not mean that the OQ production is not possible with small plant. Rather it implies that cost of production will be more with small plant compared to the medium plant.

For an output 'OR' the firm will choose the largest plant as the cost of production will be more with medium plant. Thus the firm has a series of 'SAC' curves. The 'LCA' curve drawn will be tangential to the entire family of 'SAC' curves i.e. the 'LAC' curve touches each 'SAC' curve at one point, and thus it is known as envelope curve. It is also known as planning curve as it serves as guide to the entrepreneur in his planning to expand the production in future. With the help of 'LAC' the firm determines the size of plant which yields the lowest average cost of producing a given volume of output it anticipates.

4.6.1 Short Run Vs. Long Run Costs

Q12. What are the differences between short run and long run cost.

Ans :

Basis of Difference	Short Run Costs	Long Run Costs
Time Period	The short-run is a period of time in which output can be increased or decreased by changing only variable factors.	The long run is defined as a period in which quantities of all factors are variable. No factor is fixed.
Expansion	No increase in short-run output can be made by expanding the existing plants and equipments.	In the long run output can be expanded not only by increasing labour and raw-materials but also by expanding the size of plants and equipments.
Produce Output	In short run a firm produces output at a higher point on its short-run marginal cost curve.	The firms, under long run produce at another cost curve called long period curve. In long period a firm is at will to produce or to leave the industry.
Technology	In short run costs production technology is given.	Long run can adapt production technology in market.

4.7 EXPERIENCE CURVE

Q13. What do you understand by experience curves?

Ans : **(Dec.-16)**

Economies and diseconomies of scale relate to the behaviour of long-run production costs as the scale of output changes. It is also likely that unit costs will fall over time as experience of producing and selling a good or service increases. In other words, costs of production decline as the cumulative volume of output rises.

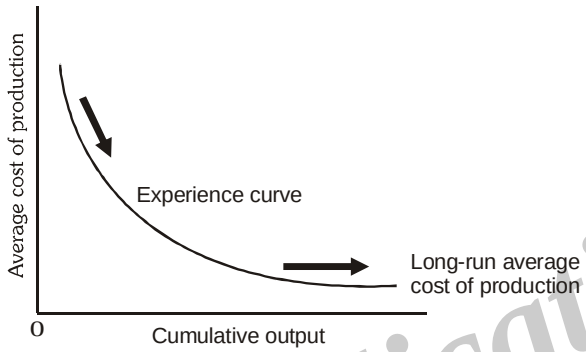


Fig.: The Experience Curve

Figure above provides an example of a typical experience curve. This is also sometimes referred to as a learning curve. As should be evident from the downward slope of the curve, the long-run average cost of production declines over time as the total cumulative output rises. This reflects efficiency gains that the firm achieves by becoming more experienced in producing a particular product or service.

By combining the notion of costs related to scale and experience, we can conclude that the achievement of competitive advantage through lower costs than competitors lies in growth of production, which in turn implies (at least in a relatively static market) capturing a larger market share. Indeed, we can see how a 'virtuous circle' could build up in which lower unit costs enhance competitiveness, drive up market share and permit a further cost-reducing expansion in output due to economies of scale and experience curve effects, as illustrated in Figure.

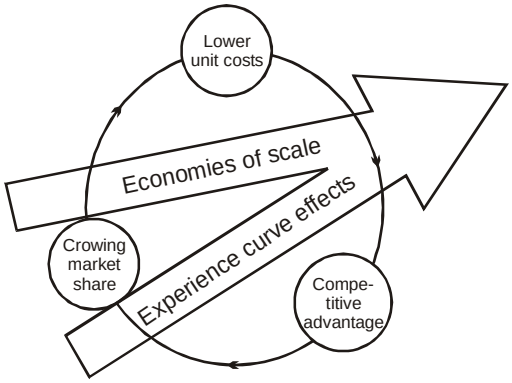


Fig.: The 'various' circle

Equally, a loss of competitive advantage leading to a fall in market share can reduce output and force up unit costs leading to a 'vicious circle' of competitive decline.

4.8 Economies and Diseconomies to the Scale

Q14. Explain briefly about economies of scale.

Ans : **(Dec.-20, Dec.-19, Dec.-18, May-18, Dec.-17, Imp.)**

Economies of scale are advantages that arise due to large-scale production. These are economies of large scale production. Economies of scale refer to the notion of increasing efficiencies of the production of goods as the number of goods being produced increases. Typically the average costs of producing a good will diminish as each additional good is produced, since the fixed costs are shared over an increasing number of goods.

Economies of scale, in micro-economics, refer to the cost advantages that a business obtains due to expansion. There are factors that cause a producer's average cost per unit to fall as the scale of output is increased. "Economies of scale" is a long-run concept and refers to reductions in unit cost as the size of a facility and the usage levels of other inputs increase.

Due to economies of scale, larger companies have greater access to markets in terms of selecting media to access those markets, and can operate with larger geographic reach. Economics of scale determine the returns to scale.

Definitions

(i) **According to Porter,** Economies of scale is the "declines in the unit's cost of production".

(ii) **According to Pratten,** Economies of scale is the "reduction in average unit costs attributable to increases in the scale of output".

(iii) **According to Spencer,** Economies of scale is a curvilinear relationship between average cost and the number of units produced".

Types

The economies and diseconomies of scale are classified into :

1. Internal economies and diseconomies of scale, and
2. External economies and diseconomies of scale

(A) Internal Economies

When a firm increases its scale of production it enjoys several economies. These economies are called internal economies. According to Cairncross, "Internal Economies are those which are open to a single factory, or a single firm independently of the action of other firms. They result from an increase in the scale of output of a firm and cannot be achieved unless output increases." Koutsoyiannis, has divided internal economies into two parts :

1. Real Economies and
2. Pecuniary Economies

1. Real Economies

Real economies are those associated with a reduction in the physical quantity of inputs, raw materials, various types of labour and various types of capital. Real economies can be of six types:

(i) **Labour Economies :** Increase in the scale of production of a firm results into many economies of labour, like (i) Specialization. Enlarged scale of production results into division of labour and specialization. This adds to the productivity and efficiency of the labour. Adam Smith illustrated this point with an example. A labourer, all alone can make just 20 pins in a day. But when he divides the work of pin-making into different parts and each part is entrusted to a different labourer then 2400 pins are made in a day. This is the marvel of division of labour, (ii) Time Saving, (iii) New Inventions, (iv) Automation of Production Process. All these increase the productivity of labour.

(ii) **Technical Economies:** These economies influence the size of a firm. These economies result from greater efficiency of the capital goods employed by big firms. A big firm can not only

install an appropriate type of machine but also different varieties of a given machine. So a firm producing on large scale can enjoy economies by the use of superior technique. Technical economies, in their turn, are of three types:

(a) Economies of Increased Dimension : A firm can obtain technical economies by increasing the size of its plant. Average cost of large machines is less but their average returns are more. For example, building of a double decker bus, does not involve double the cost of labour and raw materials. It is less than double.

(b) Economies of Linked Processes: A firm can obtain economies of linked processes. A firm producing on large-scale undertakes all processes, from the production of raw material to the finished product, even its distribution, all by herself. These linked activities save time and transport costs to the firm. For instance, iron and steel mills have their own coal and manganese mines, their own transport and distribution facilities.

(c) Economies of the Use of By-Product: Firms producing on larger-scale do not throw away the waste material, rather they produce by-product out of them and thus supplement their income. For example, sugar mills make power alcohol out of the molasses. Paper mills make paper out of cotton-waste.

(iii) Inventory Economies: A large-sized firm can enjoy several types of inventory economies. A big firm possesses large stocks of raw materials. Consequently, when the raw materials are in shot supply and sold at exorbitant price, the firm has not to worry at all. Such a firm also keeps in its stock large quantity of spare parts and small tools. In case a machine goes out of order suddenly, it can be made operative in no time. Thus, there is no fear of stoppage of production.

(iv) Selling or Marketing Economies: A firm producing on large- scale also enjoys several marketing economies in respect of sale of this large output. For example, (i) economies on account of advertisement, (ii) firm can appoint its own sole distributors and authorised dealers, (iii) economies on account of research and development. A large firm can conduct its own research to effect improvement in the quality of the product and to reduce the cost of production. This enables the firm to produce quality products.

(v) Managerial Economies: A firm producing on large-scale can engage efficient and talented managers. The task of management is decentralized into different departments. Each department is headed by an expert who looks after the minute details of his department. Thus, as the production goes on increasing, management cost goes on falling.

(vi) Transport and Storage Economies: A firm producing on large-scale enjoys economies of transport and storage. A big firm has its own fleet of trucks to carry raw material and finished products. The firm also has its own storage and godown facilities. It can, therefore, store its products when prices in the market are not favourable. Transport and storage facilities help the firm to sell its products at the opportune time and at favourable price.

2. Pecuniary Economies

Pecuniary economies are economies realised from paying lower prices for the factors used in the production and distribution of the product due to bulk-buying by the firm as its

size increases. Firms producing on large-scale get raw material at low price since they have to purchase the same in large bulk. Likewise, banks grant them several concessions as they constitute big-customers. Such firms also enjoy large discounts and commissions on advertisement and publicity of their products.

(B) External Economies

It may be useful here to refer to the concept of external economies. To be noted at the outset these economies should not be confused with the economies of scale of a particular firm. External economies are not at all related to the growth of the firm; these are independent of the size/scale of production of a particular firm. External economies refer to all those benefits and facilities which are available to all the firms of a given industry. In the words of Cairncross,

"External economies are those which are shared in by a number affirms or industries when the scale of production in any industry or group of industries increases. They are not monopolised by a single firm when it grows in size, but are conferred on it when some other firms grow larger." These economies arise not because a single firm is growing in size but they arise because the entire industry or social over-head cost undergoes expansion.

External economies can be explained with the help of an example. Supposing there is only one motor-car in a town. No one will set- up a petrol pump in such a town. If the number of cars increases, a pertrol pump will be set-up. Such a petrol pump will benefit all car-owners and not one car-owner only. If the number of cars increase still further then there will come into being service stations, auto-spare part-sellers, repair-workshops etc. Availability of these facilities will prove beneficial and convenient to all the car-owners without any discrimination. Prof. Cairncross has classified these external economies into three parts as under:

1. Economies of Concentration

When several firms of an industry establish themselves at one place, then they enjoy many benefits together, e.g., availability of developed means of communications and transport, trained labour, by-products; development of new inventions pertaining to that industry, mutual consultation by the entrepreneurs when faced with a general crisis etc. Besides, subsidiary industries may come into being, commercial and financial institutions may be set up. All these facilities help the firms to develop and progress.

2. Economies of Information

When the number of firms in an industry increases, then it becomes possible for them to have concerted efforts and collective activities. They don't feel the necessity of independent research on individual basis. Scientific and trade journals are published. It becomes convenient for the firms of a given industry to collect necessary information. These journals provide sundry information such as new markets pertaining to the goods produced by the firms or the development of new production techniques abroad etc.

3. Economies of Disintegration

When an industry develops, the firms engaged in it mutually agree to divide the production process among themselves. Every firm specializes in the production of a particular item concerning that industry. For example, in case of cycle industry localized at a particular place, some firms specialize in the manufacture of free wheels, other specialize in cycle chains, still others in pedals, rims, hubs etc. It is called decentralization or disintegration. It is of two types : (i) Horizontal disintegration and (ii) Vertical Disintegration. In case of horizontal disintegration, every firm endeavours to specialize in the production of same variety of the good e.g., all woollen mills manufacturing blankets. In cafe of vertical disintegration, different firms in the industry specialize in different stages of production process. For example, in textile industry some firms are engaged in spinning, others in weaving, still others in dyeing etc.

Q15. Explain briefly about diseconomies of scale.

Ans : **(Dec.-19)**

A diseconomy of scale exists when larger output leads to higher per unit cost. The economies of scale cannot continue indefinitely. A time comes in the life of a firm or an industry when further expansion leads to diseconomies in place of economies. Internal and external diseconomies are, in fact, the limits to large scale production. We discuss below real and pecuniary internal and external diseconomies.

(A) Real Internal Diseconomies

When a firm expands beyond an optimum level, a number of problems arise such as factor shortages, lack of coordination and management, marketing and technological difficulties, etc. They tend to raise per unit cost of production.

Thus real internal diseconomies arise from the following:

1. Managerial Diseconomies

The check to the further expansion of a firm is put due to the failure on the part of the management to supervise and control the business properly. There is a limit beyond which a firm becomes unwieldy and hence unmanageable. Supervision becomes lax. Workers do not work efficiently, wastages arise, decision-making becomes difficult, coordination between workers and management disappears and per unit cost increases.

2. Marketing Diseconomies

The expansion of a firm beyond a certain limit may also involve marketing problems. Raw materials may not be available in sufficient quantities due to their scarcities. The demand for the products of the firm may fall as a result of changes in tastes of the people and the firm may not be in a position to change accordingly in the short period. The market organization may fail to foresee changes in market conditions whereby the sales might fall.

3. Technical Diseconomies

A large scale firm often operates heavy capital equipment which is indivisible. As the firm expands its size beyond the optimum level, there are repeated breakdowns in plants and equipment's and the firm may fail to operate its plant to its maximum capacity. It may have excess capacity or idle capacity. As a result, per unit cost increases.

4. Diseconomies of Risk Taking

As the scale of production of a firm expands, risks also increase with it. An error of judgment on the part of the sales manager or the production manager may adversely affect sales or production which may lead to a great loss.

(B) Pecuniary Internal Diseconomies

Pecuniary internal diseconomies arise when the prices of factors used in the production and distribution of the commodity increase. As a firm expands, it may need more labour, raw materials, finance, etc. But trained and skilled labour may be available at higher wages.

There may arise shortages of raw materials which it may have to buy at higher prices. More finance may be available at a high interest rate. Marketing, sales and transport expenses may increase with the expansion of the firm. All these physical factors tend to raise per unit cost.

(C) Pecuniary External Diseconomies

Pecuniary external diseconomies arise solely through increases in the market prices of inputs of an industry'. As an industry expands, pecuniary external diseconomies arise when the prices of factors increase. When an industry expands, the demand for factors like labour, capital equipment, raw materials, etc. increases on the part of firms which may eventually raise their prices.

Q16. Distinguish between economies and diseconomies of scale.

Ans : **(May-19, Imp.)**

Economies of scale and diseconomies of scale are concepts that go hand in hand. They both refer to changes in the cost of output as a result of the changes in the levels of output. The two concepts are essential to the study of economics, and are very useful to corporations to monitor the point at which increases in production can result in higher per unit costs. The following article provides a good explanation of what each term means, shows how they are related to one another and highlights their differences.

Economies of Scale

Economies of scale is a concept that is widely used in the study of economics and explains the reductions in cost that a firm experiences as the scale of operations increase. A company would have achieved economies of scale when the cost per unit reduces as a result of an expansion in the firm's operations. Cost of production entails two types of costs; fixed costs and variable costs. Fixed costs remain the same, regardless of the number of units produced such as the cost of property or equipment. Variable costs are costs that change with the number of units produced, such as the cost of raw material and labor cost, given that salaries are paid at a per hour or per unit basis. The total cost of a product is made up of fixed and variable costs. A firm will achieve economies of scale when the total cost per unit reduces as more units are produced. This is because even though the variable cost increases with each unit produced, the fixed cost per unit will reduce as the fixed costs are now divided among a larger number of total products.

Diseconomies of Scale

Diseconomies of scale refers to a point at which the company no longer enjoys economies of scale, at which the cost per unit rises as more units are produced. Diseconomies of scale can result from a number of inefficiencies that can diminish the benefits earned from economies of scale. For example, a firm produces shoes in a large manufacturing facility 2 hours away from its shop outlets. The company currently has economies of scale because it currently produces 1000 units a week that only requires 2 truck load trips to transport the goods to the shop. However, when the firm starts to produce 1500 units per week, 3 truckload trips are required to transport the shoes, and this additional truckload cost is higher than the economies of scale the firm has when producing 1500 units. In this case, the firm should stick to producing 1000 units, or find a way to reduce its transport costs.

Economies of Scale vs Diseconomies of Scale

Economies of scale and diseconomies of scale are related concepts and are the exact opposites of one another. Economies of scale arise when the cost per unit reduces as more units are produced, and diseconomies of scale arise, when the cost per unit increases as more units are produced. A firm constantly aims to obtain economies of scale, and must find the production level at which economies of scale turns to diseconomies of scale.

4.9 ECONOMIES OF SCOPE

Q17. Define and explain the concept of economies of scope.

Ans :

Concept of Economies of Scope

In business parlance, the concept of economies of scope often used somewhat differently than the concept of economies of scale. It refers to the reduction in unit cost realized then the firm produces two or more products jointly rather than separately. That is to say, a multi-product firm often experiences economies of scope leading to the lowering of costs.

The degree of economies of scope can be measured in terms of the difference in the costs of production jointly and separately. The following formula is used to measure the degree of economies of scope.

$$DBS = \frac{TC(An) + TC(Bn) - TC(An + Bn)}{TC(An + Bn)}$$

Where,

DES = Degree of economies of scope

TC(An) = Total cost of producing An units of product A separately

TC(Bn) = Total cost of producing Bi\ units of product B separately

TC(An + Bn) = Total cost of producing products A and B jointly, i.e., producing An units product A and Bn units of product B together.

The economies of scope, has a close relationship with the economies of scale. A multi-product firm usually tends to have a scale of operation than a single product firm. So, the former reaps the benefits of the economies of scale. This may be attributed to the fact that a multi-product firm uses common infrastructure such as business office, factory plant, vehicles, managerial staff, etc. Furthermore, a multi-product firm can reap the economy of by-product under the economies of scope. For instance, a sugar factory can use its molasses - by product) for producing liquor by starting its own distillery units.

In practice, Motorola may be cited as a multi-product firm-producing two-way radios, cellular phones, pagers, semiconductors and other electronic gadgets - experiencing economies of scope and economies of scale to the limit.

Q18. What are the difference between economies of scale and Economies of Scope?

Ans :

BASIS FOR COMPARISON	ECONOMIES OF SCALE	ECONOMIES OF SCOPE
Meaning	Economies of scale refers to savings in the cost due to increase in output produced.	Economies of scope means savings in cost due to the production of two or more distinct products, using same operations.
Reduction in	The average cost of producing one product.	The average cost of producing multiple products.
Cost advantage	Due to volume	Due to variety
Strategy	Old	Relatively New
Involves	Product standardization	Product diversification
Use of	Large amount of resources	Common resources

Short Question and Answers

1. Budget Line

Ans :

The Budget Line, also called as Budget Constraint shows all the combinations of two commodities that a consumer can afford at given market prices and within the particular income level.

We know that the higher the indifference curve, the higher is the utility, and thus, utility maximizing consumer will strive to reach the highest possible Indifference curve. But, he has two strong constraints: limited income and given the market price of goods and services. The income in hand is the main constraint (budgetary) that decides how high a consumer can go on the indifference map. In a two commodity model, the budgetary constraint can be expressed in the form of the budget equation:

$$P_x . Q_x + P_y . Q_y = M$$

Where,

P_x and P_y are the prices of commodity X and Y and Q_x, and Q_y is their respective quantities.

M = consumer's money income.

2. Define cost

Ans :

Cost is the all monetary expenses incurred by the manufacturer to produce a goods or services. In a business where selling and distribution expenses are quite nominal the cost of an article may be calculated without considering the selling and distribution overheads. At the same time, in a business where the nature of a product requires heavy selling and distribution expenses, the calculation of cost without taking into account the selling and distribution expenses may prove very costly to a business. The cost may be factory cost, office cost, and cost of sales and even an item of expense.

For example, prime cost includes expenditure on direct materials, direct labor and direct expenses. Money spent on materials is termed as cost of materials just like money spent on labor is called cost of labor and so on. Thus, the use of term cost without understanding the circumstances can be misleading.

Meaning

Cost refers to the expenditure of funds or use of property to acquire or produce a product or service. It also refers all monetary expenses incurred by the manufacturer to produce a goods or services.

Economist define cost in terms of opportunities that are sacrifice when choice is made.

Cost is analyzed from the producer point of view. Cost estimates are made in terms of money cost calculations are indispensable for management decisions.

Cost of production refers to the total money expenses (both explicit and implicit) incurred by the producer in the process of transforming inputs into outputs.

Thus, it refers total money expenses incurred to produce a particular quantity of output by the producer.

3. Define cost function.

Ans :

Cost function express the relationship between cost and its determinants such as the size of plant, level of output, input prices, technology, managerial efficiency, etc. In a mathematical form, it can be expressed as,

$$C = f(S, O, P, T, E....)$$

Where,

C = Cost (it can be unit cost or total cost).

S = Size of plant.

0 = Level of output.

P = Price of inputs.

T = Nature of technology.

E = Managerial efficiency.

4. Opportunity Cost.

Ans :

Opportunity cost is concerned with the cost of forgone opportunity/alternatives. In other words, it is the return from the second - best use of the firms resources which the firm forgoes in order to avail of the return from the best use of resources. It can also be said as the comparison between the policy that was chosen and the policy that was rejected.

The concept of opportunity cost focuses on the net revenue that could be generated in the next best use of a scarce input. Opportunity cost is also called as "Alternative Cost".

Examples, If a firm owns a land, there is no cost of using the land (i.e., the rent) in the firm's account. But the firm has an opportunity cost of using this land, which is equal to the rent forgone by not letting the land out on rent.

5. Incremental Cost.

Ans :

Incremental costs are additions to costs resulting from a change in the nature or level of a business activity. As these costs can be avoided by not bringing any variation in the activity, they are also called as "Avoidable costs" or "Escapable costs". Moreover incremental costs can be considered as the difference in the total costs resulting from a contemplated change in the future, they are also called as "differential costs".

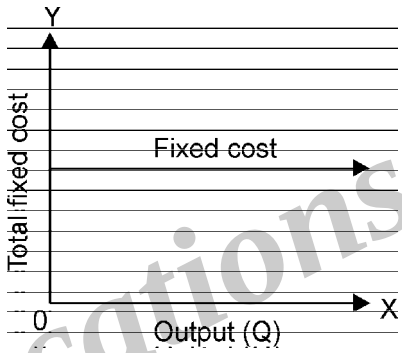
Examples, Change in distribution channels adding or deleting a product in the product line, replacing a machine etc.

6. Fixed Costs

Ans :

Fixed costs are the costs that do not vary with the changes in output. In other words, fixed costs are those which are fixed in volume though there are variations in the output level. If the time period under consideration is long enough to make the adjustments in the capacity of the firm, the fixed costs are vary. For an economist fixed costs are overhead costs and for an accountant they are indirect costs.

Examples, Expenditures on depreciation costs of administrative or managerial staff, rent on land and buildings, property taxes etc. Fixed cost assumes the shape as shown below,



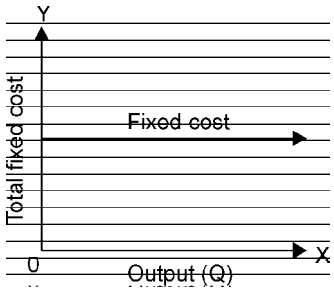
7. Variable Costs

Ans :

Variable costs are those that are directly dependent on the output i.e., they vary with the variation in the volume/level of output. Variable costs increase with an increase in output level but not necessarily in the same proportion. The proportionality between the variable cost and output depends upon the utilization of fixed facilities and resources during the production process.

Examples, Cost of raw materials, expenditure on labour, running cost or maintenance costs of fixed assets such as fuel, repairs, routine maintenance expenditure etc.

Variable cost assumes the shape shown below.



8. Marginal Cost (MC)

Ans :

Refers to the incremental or additional costs that are incurred when there is an addition to the existing output level of goods and services. In other words it is the addition to the Total Cost (TC) on account of producing additional units of the output. Marginal cost is given by

$$MC = TC_{(n+1)} = TC_n$$

Where,

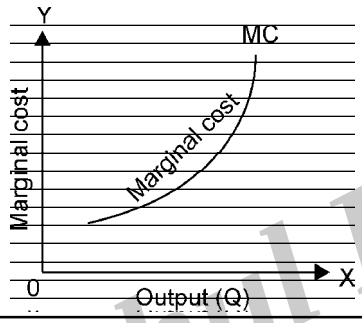
MC = Marginal cost

TC_n = Total cost before addition of units

$TC_{(n+1)}$ = Total cost after addition

n = Number of units of output.

Marginal cost assumes the shape as shown below,



9. Experience curves.

Ans :

Economies and diseconomies of scale relate to the behaviour of long-run production costs as the scale of output changes. It is also likely that unit costs will fall over time as experience of producing and selling a good or service increases. In other words, costs of production decline as the cumulative volume of output rises.

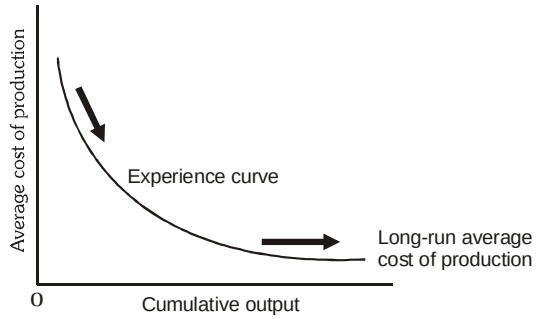


Fig. : The Experience Curve

Figure above provides an example of a typical experience curve. This is also sometimes referred to as a learning curve. As should be evident from the downward slope of the curve, the long-run average cost of production declines over time as the total cumulative output rises. This reflects efficiency gains that the firm achieves by becoming more experienced in producing a particular product or service.

10. Economies of Scope

Ans :

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TC(An + Bn) = Total cost of producing products A and B jointly, i.e., producing An units product A and Bn units of product B together.

11. Average Variable Cost

Ans :

Average Variable Cost (AVC) is defined as the ratio of total variable cost and number of units produced or output level. Average variable cost is given by

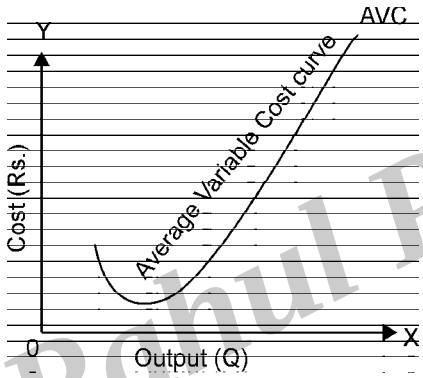
$$AVC = \frac{TVC}{Q}$$ Where,

AVC = Average variable cost

TVC = Total Variable cost

Q = Output/number of units produced.

Average variable cost assumes the shape as follow.



Average variable cost is considered in fixing the price of the product.

12. Historical Cost

Ans :

Historical cost (original cost) of an asset refers to the original price paid by the management to purchase it in the past. Whereas replacement cost refers to the cost that a firm incurs to replace or acquire the same asset now. The distinction between the historical cost and the replacement cost result from the changes of prices over time. In conventional financial accounts, the value of an asset is sown at their historical costs but in decision-making the firm needs to adjust them to reflect price level changes.

Example, if a firm acquires a machine for Rs. 20,000 in the year 1990 and the same machine cost Rs. 40,000 now. The amount Rs.20,000 is the historical cost and the amount Rs.40,000 is the replacement cost.

13. Out of Pocket Cost

Ans :

Out-of-pocket costs are those costs or expenses which are current payments to the outsiders of the firm. All the explicit costs fall into the category of out-of-pocket costs.

Examples : Rent payed, wages, salaries, interest, transport charges etc.

14. Sunk costs

Ans :

Sunk costs are those do not alter by varying the nature or level of business activity. Sunk costs are generally not taken into consideration in decision-making as they do not vary with the changes in the future. Sunk costs are a part of the outlay/actual costs. Sunk costs are also called as "non-avoidable costs" or "non-escapable costs".

Examples, All the past costs are considered as sunk costs. The best example is amortization of past expenses, like depreciation.

15. Semi-Variable Cost

Ans :

A semi-variable cost, also known as a semi-fixed cost or a mixed cost, is a cost composed of a mixture of both fixed and variable components. Costs are fixed for a set level of production or consumption, and become variable after this production level is exceeded. If no production occurs, a fixed cost is often still incurred.

Choose the Correct Answer

1. Implicit or imputed costs are also called [c]
   (a) Future costs (b) controllable costs
   (c) books costs (d) joint costs
2. The costs that are to be paid currently if the asset were to be replaced are called [c]
   (a) Historical costs (b) Past costs
   (c) Replacement costs (d) Explicit costs
3. The costs that have been originally incurred to acquire the assets are called [c]
   (a) Past costs (b) Replacement costs
   (c) Historical costs (d) Joint costs
4. Historical valuation cannot provide a valid basis for taking managerial decisions when one of the following in the economy is significant. [b]
   (a) Interest rate (b) Inflation rate
   (c) Credit rate (d) Discount rate
5. Historical costs are also called [d]
   (a) Future costs (b) Joint costs
   (c) Separable costs (d) Past costs
6. Joint costs are also called [c]
   (a) Direct costs (b) Future costs
   (c) Common costs (d) Economic costs
7. Which of the following is ascertained for a change in the level of activity ? [b]
   (a) Marginal (b) Incremental
   (c) Controllable (d) Opportunity
8. Costs that involve cash outflows at sometime and hence they are recorded in the books of account are called [d]
   (a) Opportunity costs (b) Incremental costs
   (c) Sunk costs (d) Outlay costs
9. Fixed cost per unit changes with [d]
   (a) Volume of scales (b) Profit
   (c) Production (d) Volume of production
10. Which of the following varies with the volume of production? [b]
   (a) Fixed costs (b) Variable costs
   (c) Semi fixed costs (d) Semi variable costs

Fill in the blanks

1. The Budget Line, also called as Budget _____
2. _____ refers to the expenditure of funds or use of property to acquire or produce a product or service.
3. The economies of scope, has a close relationship with the _____.
4. _____ costs are those do not alter by varying the nature or level of business activity.
5. _____ costs are a part of opportunity cost.
6. _____ costs are related to future.
7. _____ refers to the money value of the total resources/inputs required for the production of goods and services by the firm.
8. AFC stands for _____
9. _____ are advantages that arise due to large-scale production.
10. _____ is defined as the cost or expenditure which a firm incurs for producing or acquiring a good or service.

ANSWERS

1. Constraint
2. Cost
3. Economies of scale
4. Sunk
5. Implicit
6. Economic
7. Total Cost (TC)
8. Average fixed cost
9. Economies of scale
10. Actual cost

UNIT V

Market Structures and Pricing : Concept of Market Structures, Perfect Competition Market and Price Determination, Monopoly and abnormal Profits, Monopolistic Competition, Price Discrimination, Oligopoly Features of Oligopoly, Syndicating in Oligopoly, Kinked Demand Curve, Price Leadership and Market Positioning.

5.1 Concept of Market Structures

5.1.1 Meaning of Market

Q1. Define market ? Explain the features of market.

Ans :

The term "market" refers to a particular place where goods are purchased and sold. But, in economics, market is used in a wide perspective. In economics, the term "market" does not mean a particular place but the whole area where the buyers and sellers of a product are spread.

Definition of Market

According to Prof. R. Chapman, "The term market refers not necessarily to a place but always to a commodity and the buyers and sellers who are in direct competition with one another".

According to A.A. Cournot, "Economists understand by the term 'market', not any particular place in which things are bought and sold but the whole of any region in which buyers and sellers are in such free intercourse with one another that the price of the same goods tends to equality, easily and quickly".

According to Benham, "Any area over which buyers and sellers are in such close touch with one another, either directly or through dealers, that the prices obtainable in one part of the market affect the prices paid on other parts".

Features of Market

The essential features of a market are as follows:

1. Area

In economics, a market does not mean a particular place but the whole region where sellers and buyers of a product are spread. Modern modes of communication and transport have made the market area for a product very wide.

2. One Commodity

In economics, a market is not related to a place but to a particular product. Hence, there are separate markets for various commodities. For example, there are separate markets for clothes, grains, jewellery, etc.

3. Buyers and Sellers

The presence of buyers and sellers is necessary for the sale and purchase of a product in the market. In the modern age, the presence of buyers and sellers is not necessary in the market because they can do transactions of goods through letters, telephones, business representatives, internet, etc.

4. Free Competition

There should be free competition among buyers and sellers in the market. This competition is in relation to the price determination of a product among buyers and sellers.

5. One Price

The price of a product is the same in the market because of free competition among buyers and sellers.

Q2. What do you understand by market structure ?

Ans :

The term 'Market Structure' refers to the type of market in which the firms operate. Infact, the term 'market structure' refers to a selected number of the organizational characteristics which establish relationships between buyers and sellers. The organizational characteristics which are used to identify a market structure are as follows,

1. Degree of Seller Concentration

One of the most important criteria to identify the market structure is the degree of seller concentration. The degree of seller concentration refers to the number of firms producing a particular type of product and their market share for that particular product in the market.

2. Extent of Product Differentiation

The extent of product differentiation is also an important criterian to identify the market structure. Product differentiation refers to the extent by which the product of one trader is differentiated from that of the other.

3. Nature of Entry Conditions

The nature for entry of new firms in the market or industry also determines the market structure. In a perfectly competitive market structure, it is assumed that there are no barriers on the entry of new firms. In a monopolistic competition, the entry of new firms in the market is accompanied by new brands of the product. It is the barriers on entry that reduces the number of firms in the market thereby causing imperfection in the competitive market structure.

4. Degree of Buyer Concentration

This refers to the number of buyers and their ability to purchase a given product in the market.

Q3. What are the different types of Market Structure ?

Ans : **(May.-18)**

The type of market depends on the degree of competition prevailing in the market. Broadly speaking, there are four types of competition prevailing in the markets. These are:

1. Perfect Competition

Perfect competition is characterised by many sellers selling identical products to many buyers. Perfect market or competition is characterised by many sellers selling identical products to many buyers. The efficient market where goods are produced using the most efficient techniques and the least amount of factors. This market is considered to be unrealistic but it is nevertheless of special interest for hypothetical and theoretical reasons.

2. Imperfect Competition

Imperfect competition is the competitive situation in any market where the conditions necessary for perfect competition are not satisfied. It is a market structure that does not meet the conditions of perfect competition. Forms of imperfect competition include:

a) Monopoly

Monopoly comes from the greek monos, single, and polein, to sell. This is a form of market structure of imperfect competition, mainly characterised by the existence of a sole seller and many buyers. This kind of market is normally associated with entry and exit barriers. Monopoly is a situation of a single seller producing for many buyers. Its product is necessarily extremely differentiated since there are no competing sellers producing near substitute product.

b) Monopolistic Competition

It differs in only one respect, namely, there are many sellers offering differentiated product to many buyers.

c) Oligopoly

In oligopoly, there are a few sellers selling competing products for many buyers. Oligopoly word comes from the Greek oligos, few, and polein, to sell. This kind of imperfect competition is characterised by having a relatively scarce amount of firms, but always more than one, which produce a homogeneous good. Due to the small number of firms in the market, the strategies between firms will be interdependent, thus implying that the profits of an oligopolistic firm will highly depend on their competitors' actions.

d) Duopoly

Duopoly comes from the Greek *duo*, two, and *polein,* to sell. This is a type of oligopoly. This kind of imperfect competition is characterised by having only two firms in the market producing a homogeneous good. For simplicity purposes, oligopolies are normally studied by analysing duopolies. A is a market that has only two suppliers, or a market that is dominated by two suppliers to the extent that they jointly control prices.

5.2 PERFECT COMPETITION MARKET

Q4. Define perfect competition. What are the features of perfect competition ?

Ans :

A perfectly competitive market is one in which the number of buyers and sellers is very large, all engaged in buying and selling a homogeneous product without any artificial restrictions and possessing perfect knowledge of market at a time, e.g., fruit and vegetable market.

Definition of Perfect Competition

According to A. Koutsoyiannis, "Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms".

According to R.G. Lipsey, "Perfect competition is a market structure in which all firms in an industry are price-takers and in which there is freedom of entry into, and exit from, industry".

Features / Assumptions of Perfect Competition

Main features or assumptions of perfect competition are as under:

1. Large Number but Small Size of Buyers and Sellers

The number of buyers and sellers of a commodity is very large under perfect competition, but each buyer and each seller is so small in comparison with the entire market of the product, that by changing the quantity of the product bought and sold by him, he cannot influence its price.

A seller sells so small a quantity of the total supply that if he withdraws from the market, the total supply will not fall to such an extent as to raise the price. Or if a seller supplies the entire stock of the product produced by him, the total supply will not rise to such an extent as to lower the price. It means, under perfect competition no firm can influence the market price by changing the quantity of its product. Likewise, an individual buyer buys such a small quantity of the total supply of the product that he cannot influence its price by changing his demand.

2. Homogeneous Products

The other assumption of perfect competition is that all sellers sell homogeneous units of a given product. The units sold by Ram & Co. are exactly similar to the units sold by Sham & Co. Consequently, buyers have no reason to prefer the product of one seller to the one of another seller. Because of large number of sellers and homogeneous products, a firm operating under the condition of perfect competition is merely a price taker and not a price maker.

3. Perfect Knowledge

Buyers and sellers are fully aware of the price of the product prevailing in the market. Buyers have perfect knowledge about the price being charged by the sellers for a given product. Sellers also know well, where and from which buyer, they can charge more

price. Because of this knowledge and awareness, all sellers will charge one price for one product from all buyers without any distinction. There will therefore, be no uncertainty in the market.

4. Free Entry and Exit of Firms

Under perfect competition, in the long-run, any new firm can enter any industry and any old firm can withdraw from any industry. There is no legal or social restriction on the entry of new firms into any industry. This assumption is subsidiary to the first assumption regarding large number of sellers. It is because of free entry of firms that their number is very large.

5. Free from Checks

Buyers and sellers are free from any checks or restrictions with regard to their buying and selling of any product. There is no agreement between buyers and sellers in respect of the production, quantity or price of a good. Nor have the buyers any attraction to buy the good from a particular seller. Government also imposes no restrictions in this matter.

6. Perfect Mobility

Another important assumption of perfect competition is that in such a market there is perfect mobility of factors as well as goods and services. Factors of production are free to seek employment in any industry that they like. No factor of production is monopolized by anyone. Each firm can get as many factors as it needs. Goods and services can be sold at any place where they are likely to fetch good price.

7. Lack of Transport Costs

In a perfect competitive market cost of transport does not influence the price of the product.

8. Lack of Selling Costs

Under perfect competition, a seller does not spend on advertisement and publicity etc. It is so because all firms sell homogeneous product. Hence, there is no need on the part of a firm to incur selling cost.

9. Same Price

Under perfectly competitive market, each seller charges the same price for the same product. Price is determined by the industry. All firms have to sell their products at this price. Average revenue and marginal revenue of the product are equal. Firms under perfect competition are price-taker and not price-maker.

5.2.1 Price output Determination in Perfect Competition

Q5. Explain price output determination under perfect competition.

Ans : **(Dec.-19)**

According to Marshall, the price of a commodity in the perfectly competitive market is determined by the demand and supply of all the firms taken together. The demand and supply forces are as much important to determine the price of a commodity as the two blades of a scissors to cut a piece of paper. But Marshall, who propounded the theory that the price is determined by the equilibrium between demand and supply, also laid emphasis on the role of time factor in determination of price. The time factor is important to adjust the supply.

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

a) The market-period
b) The short-period, and
c) The long-period.

Equilibrium Point

Equilibrium point is the state at which firm enjoys maximum profits and it has no incentive either to reduce or increase its output level. In perfect competition, the firm has to satisfy two conditions to attain equilibrium state.

(i) Marginal revenue should be equal to marginal cost (MR = MC).

(ii) Marginal Cost (MC) curve should cut the marginal revenue (MR) curve from below. In the case of monopoly, the firm attains equilibrium state if its MR = MC.

a) Price Determination During Market Period

According to Marshall, 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. On the basis of this 'market' supply and the existing 'market' demand, a temporary equilibrium will be brought between demand and supply setting the 'market' equilibrium price. In the following figure MS is the market-period supply curve which is perfectly inelastic. D_1D_1 is the original demand curve. The supply of the commodity available in the market is OM. This supply is in fixed quantity on any particular day in the market.

The equilibrium price is OP_1 Now let us assume that the demand for the commodity increases on the day by the shift in the demand curve to D_2 D_2. Since the supply of the commodity cannot be increased immediately, its price goes up to OP_2. Thus, the price of the commodity rises with the rise in demand. During the market-period the demand force is more important than the supply force to influence the equilibrium price. Due to increase in demand the original market-period equilibrium E_1 shift to new equilibrium E_2.

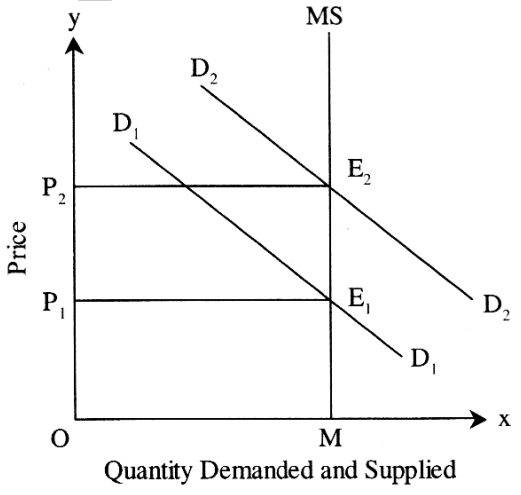


Fig.: Price Determination during Market Period

b) Price-output Determination during 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 firms 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. In the following figure OP_1 is the original market price, and OM is the equilibrium quantity demanded and supplied. Due to increase in demand from D_1 D_1 to D_2 D_2 the price of the commodity goes up from OP_1 to OP_2 due to fixed supply. Due to increased demand and increased price from OP_1 to OP_2, the supply in the short-period is increased as signified by the short-period supply curve SS.

The supply of the commodity has increased slightly from OM to OM_2 As a result of the increase in the supply, the short-period equilibrium price OP_3 is determined, which is less than the market price OP_1. However, the short-period equilibrium price OP_3 is higher than the original market price OP_1. Hence, E_3 denotes short-period equilibrium of the industry and the short-period, equilibrium price is OP_3.

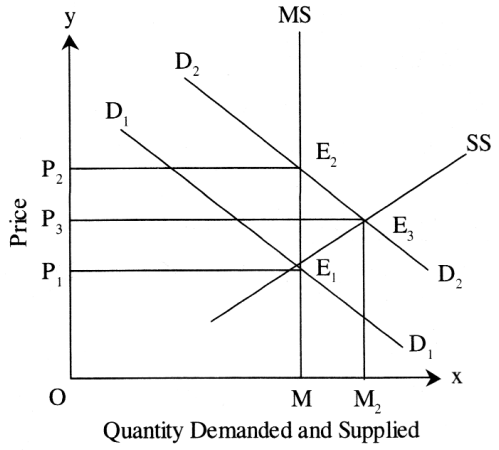


Fig.: Price Determination duringShort-period

c) Price-output Determination in the Long-period

The long-period is sufficiently long to enable the supply to be increased to meet increase in demand. In the long period, the existing firms in the industry can alter their production capacity. Even new firms may also enter the industry, thereby increasing production and supply of the commodity.

In the long-run price is relatively greater elastic. But the long-run price of the commodity may be higher than or lower than or equal to the original market price depending upon increasing costs, diminishing costs or constant costs respectively.

i) Long-period Price in the Increasing Cost Industry

If all the firms in the industry are experiencing diminishing returns to scale, then the additional output is secured only at the increasing cost. As a result of this, the long-period supply curve of the industry will be positively sloped, indicating the long period supply curves LS.

The following figure shows that OP_1 is the original market price and OM is the original quantity demanded and supplied. An increase in the demand from D_1 to D_2 leads price to increase to OP_2. But in the long-period, the price falls to OP_4 as the supply has increased from OM to OM_3. The long-period normal price OP_4 is higher than the original market price OP_1 because of the diminishing returns to scale. However, the long-period price OP_4 is lower than the short-period price OP_3 and the industry is said to be in equilibrium at E_4.

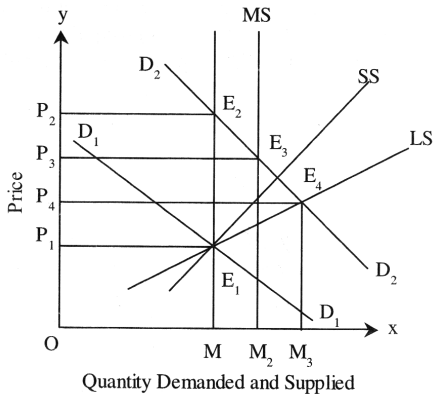


Fig.: Price Determination during Long-period

ii) Long-period Price in the Decreasing Cost Industry

The decreasing cost industry is that wherein the net external economies are so powerful that the long-period price is lower than the original market price.

The following figure shows that OP_1 is the original market price at which OM is the quantity demanded and supplied. An increase in the demand for the commodity is accompanied by the rise in the market price from OP_1 to OP_2. Due to increase in the supply, the short-period price sets in at OP_3.

But in the long-period, the price falls to OP_4. Since, the industry is subject to increasing returns to scale, the net external economies cause the cost per unit to decline. As a result of this, the long-period price OP_4 is lower than even the original market price OP_1.

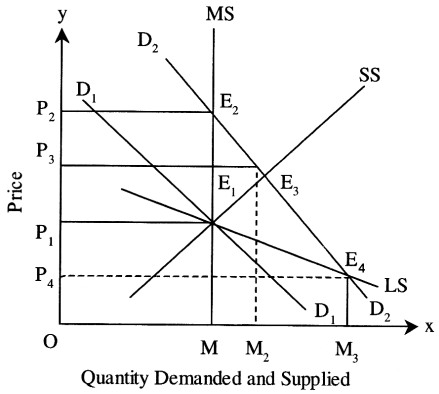


Figure: Price Determination in Decreasing Cost Industry

iii) Long-period Price in the Constant Cost Industry

The industry which experiences constant returns to scale is called constant cost industry. The firms in the constant cost industry experience such a stage of expansion which gives rise to some external economies and external diseconomies which cancel each other. As a result, there is no shift in the cost per unit. The resultant effect is, the horizontal long-period price determination in the case

of constant cost industry. In the following figure, OP_1 is the original market price, the quantity demanded and supplied is OM. The increase in demand has led the market price to go up to OP_2 as the quantity supplied remains unchanged in the market-period.

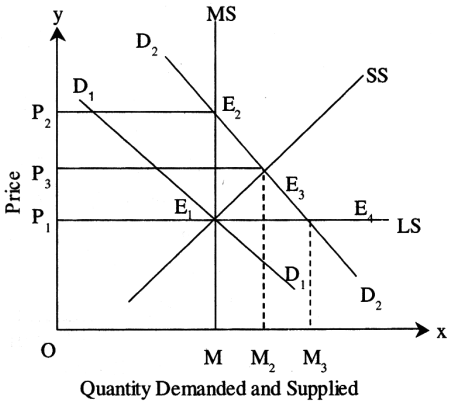


Fig.: Price Determination in Constant Cost Industry

However, due to small increase in supply the short-period price sets in at OP_3 which is lower than OP_2, but higher than the original market price OP_2. In the long- period, the quantity supplied increases to OM_3 and the price falls to OP_1. Thus, the long-period normal price coincides with the original market price OP_1. In the long- period, the constant cost industry is in equilibrium at E_4 supplying OM_3 equilibrium output.

Q6. Explain Firm and Industry Equilibrium Under Perfect Competition.

Ans :

Price is determined by the market forces under the conditions of perfect competition. Here the firms have absolutely no control over the prices. The only pricing strategy available to them in perfect competition is to charge the same price as other firms charges. In case of perfect competition, the industry demand curve is negatively sloped curve. It is because, it indicates the demand from all consumers at various prices.

The industry demand curve 'ID' can be seen in the following figure.

We can also observe the firms supply curve 'FS' which is rising upward. It indicates that the firm is more interested to sell large quantity at a higher price. It is the price that determine the quantity demanded and quantity supplied. The ultimate price that prevails in the market under perfect competition is one at which quantity demanded is equal to the quantity supplied. This price is also called equilibrium price, as it balances the influence of demand on supply and vice versa.

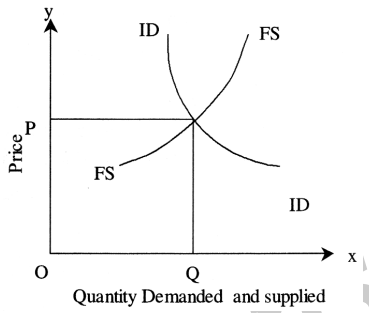


Fig.: Price Determination in Case of the Firm and Industry Under Perfect Competition

The figure above, shows how the equilibrium is determined. OP is the equilibrium price at which ID and FS intersect each other. At price OP, the quantity demanded is equal to the quantity supplied. If the price is higher than equilibrium price OP, supply will be more and hence the price is likely to fall due to decrease in demand. As the price falls, demand for quantity will increase. But the quantity supply may decline.

If the price falls below OP, the demanded quantity will rise quickly and the supply is not forthcoming to meet that demand. This will push up the price in the market to OP.

Q7. What are the advantages and disadvantages of Perfect Competition?

Ans :

Advantages of Perfect Competition

Advantages of perfect competition can be explained as follows:

1. Consumer Sovereignty

There is consumer sovereignty in a perfect competitive market. The consumer is rational and he has perfect knowledge about the market conditions. Therefore, he will not purchase the products at a higher price.

2. Beneficial to Consumers

In the perfectly competitive market, the price is equal to the minimum average cost. It is beneficial to the consumer.

3. Cost-Saving

The perfectly competitive firms are price-takers and the products are homogeneous. Therefore it is not necessary for the producers to incur expenditure on advertisement to promote sales. This reduces the wastage of resources.

4. Economic Efficiency

In the long-run, the perfectly competitive firm is functioning at the optimum level. This means that maximum economic efficiency in production is achieved. As the actual output produced by the firm is equal to the optimum output, there is no idle or unused or excess capacity.

Disadvantages of Perfect Competition

Disadvantages of perfect competition can be explained as follows :

1. No Scope for Economies of Scale

This is because there are many small firms producing relatively small amounts. Industries with high fixed costs would be particularly unsuitable to perfect competition. This is one reason why perfect competition is unlikely in the real world.

2. Homogenous Products

Undifferentiated products are boring giving little choice to consumers. Differentiated products are very important in industries such as clothing and cars.

3. Insufficient Profits

Lack of supernormal profit may make investment in R & D unlikely this would be important in an industry such as pharmaceuticals which require significant investment.

4. Free flow of Technology

As there is no patent kind of thing, there is no incentive to develop new technology because it would be shared with other companies.

5. Externalities

If there are externalities in production or consumption there is likely to be market failure without government intervention.

5.3 MONOPOLY

Q8. Define monopoly. What are the characteristics of monopoly ?

Ans : **(Dec.-20, Dec.-19, Dec.-18, Dec.-16, Imp.)**

A natural monopoly is defined in economics as an industry where the fixed cost of the capital goods is so high that it is not profitable for a second firm to enter and compete. There is a "natural" reason for this industry being a monopoly. It is an extreme imperfect form of market. In ancient times, common salt was responsible for natural monopolies, till the time people learned about winning sea-salt. Regions facing scarcity of transport facilities and storage were most prone to notorious acceleration of commodity prices and uneven distribution of daily-use products and services. The characteristics of monopoly are solitary to the condition generated by intent. Monopoly symbolizes domination over a product to the extent that the enterprise or individual dictates the terms of access and the markets for availability. The term is specific to a seller's market. A similar situation in the buyer's market is referred to as monopsony. It first appeared as an economics-related term in 'Politics' by Aristotle.

Meaning of Monopoly

The term 'Monopoly' has been derived from Greek term 'Monopolies' which means a single seller. Thus, monopoly is a market condition in which there is a single seller of a particular commodity who is called monopolist and has complete control over the supply of his product.

Definition of Monopoly

According to D. Salvatore, "Monopoly is the form of market organisation in which there is a single firm selling a commodity for which there are no close substitutes."

According to Ferguson and Kreps, "A pure monopoly exists when one and only one firm produces or sells the commodity in question. In other words, a monopoly is a one-firm industry"

According to Koutsoyiannis, "Monopoly is a market situation in which there is a single seller, there are no close substitutes for commodity it produces, there are barriers to entry."

In the words of Baumol, "A pure monopoly is defined as the firm that is also an industry. It is the only supplier of some particular commodity for which there exists no close substitute."

Characteristics of Monopoly

1. Single Seller

The producer or seller of the commodity is a single person, firm or an individual and that firm has complete control on the output of the commodity.

2. No Close Substitutes

All the units of a commodity are similar and there are no substitutes to that commodity.

3. No Entry for New Firms

Monopoly situation in a market can continue only when other firms do not enter the industry. If new firms enter the industry, there will not be complete control of a firm on the supply. As such, whenever a firm enters the industry, monopoly situation comes to an end. There/art, monopoly industry is essentially one-firm industry. This signifies that under monopoly there is no difference between a firm and an industry.

4. Profit in the Long Run

A monopolist can earn abnormal profit even in the long run because he has no fear of a competitive seller. In other words, if a monopolist gets abnormal profits in the long run, he cannot be dislodged from this position. However, this is not possible under perfect competition. If abnormal profits are available to a competitive firm, other firms will enter the competition with the result abnormal profits will be eliminated.

5. Losses in the Short Period

Generally, a common man thinks that a monopoly firm cannot incur loss because it can fix any price it wants. However, this understanding is not correct. A monopoly firm can sustain losses equal to fixed cost in the short period. A monopolist means that there is only a single person or a firm to sell the commodity.

6. Nature of Demand Curve

Under monopoly the demand for the commodity of the firm is less than being perfectly elastic and, therefore, it slopes downwards to the right. The main reason of the demand curve sloping downwards to the right is the complete control of the monopolist on the supply of the commodity.

7. Price-discrimination

From the point of view of profit a monopolist can change different prices from different consumers of his commodity. This policy is known as price discrimination. He adopts the policy of price discrimination on various bases such as charging different prices from different consumers or fixing different prices at different places etc.

8. Firm is a Price-Maker

A competitive firm is a price-taker whereas a monopoly firm is a price-maker. This is because a competitive firm is small compared to market and therefore, it does not have market power. This is not true in the case of a monopoly firm because it has market power. Hence, it is a price maker.

9. Average and Marginal Revenue Curves

Under monopoly, average revenue is greater than marginal revenue. Under monopoly, if the firm wants to increase the sale it can do so only when it reduces its price. This means AR would decline when sale increases. In that case MR would be less than AR. (ii) AR slopes downwards to the right and is greater than MR.

Q9. Explain the classification of monopoly.

Ans :

The Monopoly firms as a Price makes cam be classified into two types.

(a) Simple Monopoly: If the monopoly firm charges the same price from all its clients, it is called simple or single price monopoly.

E.g.: Tata Company charges the same price to all the Tata Indica cars of the same model.

(b) Discriminating Monopoly: If the monopoly firm charges different prices to different consumers for the same product, it is called discriminating monopoly.

E.g.: A Doctor may take Rs.100/- from a rich man and only Rs.50/- from a poor man for the same treatment.

The Monopoly on the basis of Ownership of the firm can be classified as two types:

(a) Private Monopoly: If a private firm monopolizes the market, it is called private monopoly.

E.g:-Hindustan Lever Ltd., is having monopoly power to produce LUX Soap.

(b) Public Monopoly: If the market for a product is monopolized by a government enterprise, it is called public or social monopoly.

E.g: Water, electricity etc.

Others

(a) Limited Monopoly: If the monopolist having limited power in fixing the price of his product, it is called Limited Monopoly. It may be due to the fear of distant substitutes or government intervention or the entry of rival firms.

(b) Unlimited Monopoly: If the monopolist is having unlimited power in fixing the price of his good or service, it is called Unlimited Monopoly. Ex. A Doctor in a village.

(c) Natural Monopoly: Sometimes monopoly may arise due to scarcity of natural resources. Nature provides raw materials in some places only. The owner of the place will become monopolist. For Eg.Diamond mines in South Africa.

(d) Legal Monopoly: If monopoly arises on account of legal support or as a matter of legal privilege, it is called Legal Monopoly. Ex. Patent rights, special brands, trade names, copyright etc.,

(e) Voluntary Monopoly: To get the advantages of Monopoly some private firms come together voluntarily to control the supply of commodity. These are called voluntary monopolies. Generally, these monopolies arise with industrial combinations. These voluntary monopolies are of three kinds (a) cartel (b) trust (c) holding company. It may be called artificial monopoly.

5.3.1 Price-Output Determination under Monopoly

Q10. Explain briefly about price-output determination under monopoly in short-run.

Ans : **(Dec.-20, Dec.-18, Dec.-16, Imp.)**

Under monopoly, the average revenue curve for a firm is a downward sloping one. It is because, if the monopolist reduces the price of his product, the quantity demanded increases and vice versa. In monopoly, marginal revenue is less than the average revenue. In other words, the marginal revenue curve lies below the average revenue curve.

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

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

From fig.below, it can be seen that the demand curve or average curve is represented by AR, marginal revenue curve by MR, average cost by AC, and marginal cost curve by MC. OQ is the equilibrium output, OA is the equilibrium price, QC is the average cost, and BC is the average profit (AR minus AC is the average profit).

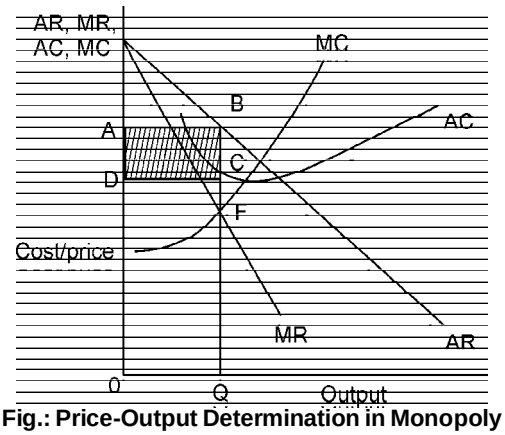


Fig.: Price-Output Determination in Monopoly

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

Q11. How is price determined under monopoly in long run ?

Ans : **(Dec.-20, Dec.-16, Imp.)**

The long-run is sufficiently a long period for the monopolist to adjust the plant size or to use the existing plant at any level that maximises his profit. Since there is no entry of outside firms in the monopoly market, there is no competition. In the absence of competition, the monopolist can afford to produce output at sub-optimal scale. That means the monopolist need to produce output at sub-optimal sale.

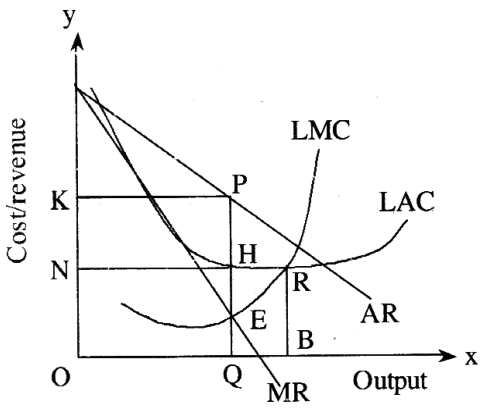


Fig.

Therefore, the monopolist need not reach the minimum point of the LAC as the market size does not permit to expand output to produce it at the minimum cost per unit (LAC). However, the monopolist would not stay in the business if he makes losses in the long-period. He will continue to secure super-normal profit even in the long- period as the entry of outside firms is blocked.

Figure explains the long-period equilibrium of a monopoly firm. The firm is in equilibrium at E where LMC = MR and LMC curve cuts MR curve from below. QP is the equilibrium price and OQ is the equilibrium output. Since the price per unit (AR)QP is greater than the cost per unit (LAC) QH, HP represents the per unit super normal profit.

The total super normal profit is equal to PKNH. It is important to point out that the equilibrium price QP is determined on the assumption of the absence of the actual entry and potential entry. If there is potential entry in the market, the monopolist will fix up the price at a level lower than QP.

In order to block the potential entry of outside firms, the monopolist may fix up price equal to BR. Since the price per unit is equal to the cost per unit at R, the monopoly firm can earn only normal profit even in the long-run if it has to prevent potential entry.

Therefore it can be said that in the absence of actual and potential entry of outside firms in the market the monopoly firm can secure super-normal profit in the long- period. But in the presence of potential entry, even in the long-period the monopoly firm can earn just normal profit to meet the threat of entry.

Q12. What are the advantages and disadvantages of Monopoly ?

Ans :

Advantages of Monopoly

"Advantages of monopoly can be explained as follows:

1. Research and Development

Supernormal Profit can be used to fund high cost capital investment spending. Successful research can be used for improved products and lower costs in the long term.

E.g.: Telecommunications and Pharmaceuticals.

2. Economies of Scale

Monopolies can produce at lower costs which makes them more efficient than smaller firms. This in turn increases output which leads to a decrease in average costs of production. These can be passed on to consumers in the form of lower prices.

3. Competition for Corporate Control

Monopolists are subject to the discipline of the financial markets. If a monopoly, with potentially low costs, fails to perform, then it may be a subject to takeover bid.

4. Stability of Prices

In a monopoly market the prices are most of the times stable. This happens because there is only one firm involved in the market that sets the prices if and when it feels like. In other types of market structures prices are not stable and tend to be elastic as a result of the competition that exists but this is not the case in a monopoly market as there is little or no competition at all.

5. Source of Revenue for the Government

The government gets revenue in form of taxation from monopoly firms.

6. Massive Profits

Due to the absence of competitors which leads to high number of sales monopoly firms tend to receive super profits from their operations. The massive profits realised may be used in such things as launching other products, carrying out research and development among many other things that may be beneficial to the firm.

Disadvantages of Monopoly

Following are the disadvantages of monopoly:

1. Exploitation of Consumers

A monopoly market is best known for consumer exploitation. There are indeed no competing products and as a result the consumer gets a raw deal in terms of quantity, quality and pricing. The firm may find it easy to produce inferior or sub-standard goods if it wishes because the end of the day they know very well that the items will be purchased as there are no competing products for the already available market.

2. Dissatisfied Consumers

Consumers get a raw deal from a monopoly market because quality will be compromised. Therefore it is not a wonder to see very dissatisfied consumers who often complain about the firm's products.

3. Higher Prices

No competition in the market means absence of such things as price wars that may have benefited the consumer and as a result of this monopoly firms tend to charge higher prices on goods and services hence inconveniencing the buyer.

4. Price Discrimination

Monopoly firms are also sometimes known for practicing price discrimination where they charge different prices on the same product for different consumers.

5. Inferior Goods and Services

Competition is minimal or totally absent and as such the monopoly firm may willingly produce inferior goods and services because after all they know the goods will not fail to sell.

6. Prices and Costs

These will be higher than under perfect competition. Under perfect competition, firms are forced to produce at the lowest cost possible, taking into account the current state of technology and available resources, which keeps prices down while allowing them to make a reasonable profit. However, barriers to entry allow the monopolist to charge higher prices and make large profits, even if it is not producing in the most efficient way.

5.3.2 Abnormal Profits

Q13. Define abnormal profit.

Ans :

Abnormal profits means a profits that exceed the amount a firm must receive to become capable of continuing the production. Persistence of

abnormal profits in an industry will attract new firms to the business. As a result, the supply will increase and prices will fall which in turn will bring the profit of the business to normal profits. Imposition of conditional barriers for entering into a new business can make the abnormal profits remain in the long-run. It is also called as supernormal profit or economic profit.

Q14. Distinguish between Perfect Competition and Monopoly.

Ans :

	Points of comparison	Perfect competition	Monopoly
1.	Relation between AR	AR = MR	AR > MR
2.	Profit in the long-run	Normal profits in the long-run also.	Supernormal profits in the long-run.
3.	Number of sellers	Large number of sellers	Single seller
4.	Barriers to entry and exit.	Free entry and exit, as there are no barriers.	There are strong barriers
5.	Control on price. taker.	The seller is only the price inelastic.	Monopolist is the price maker
6.	Nature of demand-curve	Perfectly elastic	Inelastic
7.	Relationship between firm and industry.	Each firm is a part of the industry.	Firm and industry are one and the same.

5.4 MONOPOLISTIC COMPETITION

Q15. What is monopolistic competition? Explain the features of monopolistic competition.

Ans : **(Dec.-20)**

Monopolistic competition refers to a market situation where there are many firms selling a differentiated product. "There is competition which is keen, though not perfect, among many firms making very similar products". No firm can have any perceptible influence on the price-output policies of the other sellers nor can it be influenced much by their actions. Thus, monopolistic competition refers to competition among a large number of sellers producing close but not perfect substitutes for each other.

Definiton

According to J.S. Bains, "Monopolistic competition is market structure where there is a long number of small sellers, selling differentiated but close substitute products".

According to Baumoul, "The term monopolistic competition refers to the market structure in which the sellers do have a monopoly (they are the only sellers) of their own product, but they are also subject to substantial competitive pressures from sellers of substitute product".

Monopolistic competition is the main form of imperfect competition. Thus, imperfect competition is a market situation wherein one or more conditions of perfect competition are absent.

Features of Monopolistic Competition

Monopolistic competition is a modern form of the market. A large variety of goods are sold in such a market. Its main features can be stated as follows :

i) Large Number

The number of firms operating under monopolistic competition is sufficiently large. Moreover there is freedom of entry. There are no quantitative restrictions or differences in market conditions. However, each firm differs from its rivals in some qualitative respect.

ii) Close Substitutes

In case of a monopoly there are no substitutes available. Under monopolistic competition firms produce very close substitutes. Chocolates of one company may serve a similar purpose as that of some other firm. The only difference may be of some variation in the quality of the product.

iii) Group

Firms under monopolistic competition together form a group. They cannot be called an industry. This is because their products are somewhat dissimilar and not homogenous as under competitive industry.

iv) Product Differentiation

Under monopolistic competition products are differentiated. This is the outstanding feature of this form of market. Otherwise monopolistic competition closely resembles perfect competition. The fundamental difference between the two is that products are no more homogenous. Goods produced are deliberately differentiated.

v) Selling (Advertising) Cost

Selling Cost (SC) is another outstanding feature of a monopolistic competitive market. This in the form of advertisement expenditure. Selling Cost and Product Differentiation together enable the producer to maintain some control over market conditions and influence the shape of the demand curve. Both features are interdependent.

5.4.1 Price-Output Determination in Monopolistic Competition

Q16. How is price output determined under monopolistic competition ?

Ans : **(Dec.-20, Dec.-18, Imp.)**

It is common that every firm whether operating under perfect market or imperfect market, wants to maximize the profits. It means that the firm under monopolistic competition also will reach equilibrium when its marginal cost equals its marginal revenue (MC = MR). The demand curve for the firm in case of monopolistic competition is just similar to that of monopolist.

As the products are differentiated, the demand curve has a downward slope, In other words, each firm has a limited control over price. These firms are price makers as far a given group of customers is concerned. The demand for their products and services is relatively inelastic. 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. At lower prices, the firm can sell more. There is no significant variant in the cost functions also.

A) Price-Output Determination in Short-run

In the short-run, firms may experience supernormal or normal profits or even losses. When there is a fall in costs or increase in demand, the firms may enjoy supernormal profits. In other words, if the firm satisfies the following two conditions, it may take supernormal profits.

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

b) Where a average revenue is less than average cost (AR < AC).

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

Figure below reveals that the demand curve is a downward sloping curve because of product

differentiation. The cost functions of a firm are not different from those of earlier market situations. At F, marginal cost (MC) is equal to marginal revenue (MR), extend F to point B on average revenue (AR) curve and Point Q on X axis.

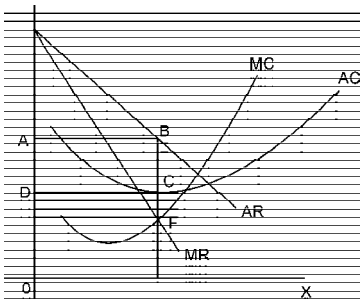


Fig.: Price-Output Determination in Monopolistic Competition in the Short-run

OQ is the equilibrium output, OA = OB = Equilibrium price and QC is the average cost. Average profit = average revenue minus average cost. BC is the average profit. Profit × Quantity = Total profit.

The area ABCD represents the supernormal profits earned by a firm under monopolistic competition in the short-run.

B) Price-Output Determination in Long-run

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 continue till the supernormal profits of the firms completely get eroded 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 to be noted that normal profits are part of average costs.

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

a) MR = MC

b) AR = AC

At the equilibrium level of output.

Thus, the firm has to fulfil dual equilibrium conditions as mentioned above. But when compared to long run equilibrium position of a perfectly competitive firm, even though AR = AC, AC will not be at its minimum point at equilibrium level of output. And also, MR is not equal to either AR or AC, MR is well below AR in the case of monopolistic competitive firm.

Why Average Cost (AC) is not Equal to Average Revenue (AR) at its Minimum Point?

It is because, the average cost (AC) can be tangential to the downward slopping average revenue (AR) curve only at higher than its minimum point. The average (AC) is higher in case of monopolistic competitive firms because of excess or idle capacity and high advertising costs.

From Fig.below, it can be observed that in the long-run, the average cost (AC) curve will be tangential to the downward sloping average revenue (AR) curve at point E. It can be noted that the average cost curve is tangential to the average revenue curve at higher than its minimum point F. MR = MC at point K. OQ is the equilibrium output and OP is the equilibrium price.

Thus, in the long-run, a firm under monopolistic competition achieves equilibrium price and output level when both conditions of equilibrium are satisfied.

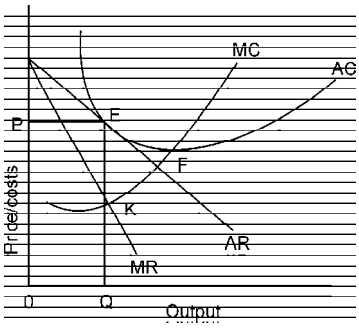


Fig.: Price-output Determination in Monopolistic Competition in the Long run

Q17. What are the advantages and disadvantages of Monopolistic Competition ?

Ans :

Advantages of Monopolistic Competition

The advantages of monopolistic competition are as follows:

1. Promotion of Competition (Lack of Barriers to Entry)

In such a market, one of its primary aspects is that there a lack of barriers to entry (factors that cause difficulty for a new firm to enter the market, e.g., intellectual property rights, advertising, large start-up costs, etc.), hence making it relatively easy for firms to enter (and exit) the market. This therefore ensures (atleast in the long run) no 'single firm' will find themselves with monopoly power (and with that - the ability to exploit consumers), due to new entering firms to the market.

2. Differentiation Brings Greater Consumer Choice and Variety

One of the main positives to come out of a monopolistically competitive market is that in order to be a competitive firm within such a marketplace, a firm's primary goal is to differentiate itself from others in order to gain greater custom than its rival competitors - essentially appealing to consumer sovereignty (where consumers determine the goods to be produced within a market). With this, is the provision of greater choice and variety of products and services for consumers to purchase from - they have a wider range of consumer choice as opposed to just a single choice (either just one product - monopoly - or all the products are generic and homogenous - perfectly competitive).

3. Product and Service Quality Development

An advantage of monopolistic competition is that it enhances a firm's ability to improve a product's quality through its brand. Economists defend branding as a way to enhance trust and reliability to the consumer. Brands strengthen the need to maintain high quality based on the business's financial stake in its reputation.

4. Consumers Become More Knowledgeable of Products

A positive externality from monopolistic competition and the intense advertising and marketing that accompanies it, is that due to firms trying to differentiate their products - consumers become more informed and aware of their options regarding such products and services. They can gain an understanding of the unique features and aspects that certain products have compared to that of others. Hence, with this comes further competition, as firms can recognise what consumers are wanting to a better degree.

Disadvantages of Monopolistic Competition

Following are the disadvantages of monopolistic competition:

1. Liable of Excess Capacity

A negative factor of firms that are in monopolistic competition is that' they do not produce enough output to efficiently lower the average cost and benefit from economies of scale. They are reducing their 'economic profits', as a result of the marginal revenue being less than that of the marginal cost. Moreover, the funding and expense that goes into packaging, marketing and advertising can deemed extremely wasteful on some levels.

2. Allocatively Inefficient

Compared with perfect competition, it can be shown that such firms that there is an element of allocation efficiency as the price is above that of the marginal cost curve - less so in the long- run, due to more competition. As the demand curve is one which is downward sloping this then implies the price has to be greater than the marginal cost for a monopolistically competitive firm. Hence it is allocatively inefficient as not enough of the product gets produced for society to benefit - they want more, however this would force the company to lose money.

3. Higher Prices

Another drawback of a monopolistic competition is that as a result of firms having 'some market power', they can extenuate a mark-up on the marginal cost of revenue. Compared to a perfectly competitive firm, who have their price equal to their marginal cost. This would be difficult for a governmental authority to regulate for two reasons:

i) There are many firms; and

ii) They would be making a loss - hence eventually forcing such firms out of business.

4. Advertising

Advertising and marketing can be beneficial to consumers on some levels such as providing information to customers and from this an increase in competition; it can also have negative impacts on consumer sovereignty. It is argued to manipulate and distort what consumers desire, as well as obviously reducing competition as consumers become captivated over the perception of differentiation.

5.5 PRICE DISCRIMINATION

Q18. Define price discrimination ? Explain the requirements of price discrimination.

Ans :

Price discrimination is a pricing strategy that charges customers different prices for the same product or service. In pure price discrimination, the seller will charge each customer the maximum price that he or she is willing to pay. In more common forms of price discrimination, the seller places customers in groups based on certain attributes and charges each group a different price.

Price discrimination allows a company to earn higher profits than standard pricing because it allows firms to capture every last dollar of revenue available from each of its customers. While perfect price discrimination is illegal, when the optimal price is set for every customer, imperfect price discrimination exists. For example, movie theaters usually charge three different prices for a show. The prices target various age groups, including youth, adults and seniors. The pieces fluctuate with the expected income of each age bracket, with the highest charge going to the adult population.

Meaning of Price Discrimination

Price discrimination is the practice of charging a different price for the same good or service. There are three of types of price discrimination first-degree, second- degree and third-degree price discrimination.

Definitions of Price Discrimination

According to Krugman and Paul R., "Price discrimination is a pricing strategy where identical or largely similar goods or services are transacted at different prices by the same provider in different markets or territories".

According to Peter Belobaba and Amedeo Odoni, "Price discrimination is the distinguished from product differentiation by the more substantial difference in production cost for the differently priced products involved in the latter strategy".

Requirements of Price Discrimination

Essentially there are two main situations required for discriminatory pricing:

i) Differences in price elasticity of demand between markets

There must be a different price elasticity of demand from each group of consumers. The firm is then able to charge a higher price to the group with a more price inelastic demand and a relatively lower price to the group with a more elastic demand. By adopting such a strategy, the firm can increase its total revenue and profits.

ii) Barriers to prevent consumers switching from one supplier to another

The firm must be able to prevent "market seepage" or "consumer switching" defined as a process whereby consumers who have purchased a good or service at a lower price are able to re-sell it to those consumers who would have normally paid the expensive price. This can be done in a number of ways and is probably easier to achieve

with the provision of a unique service such as a haircut rather than with the exchange of tangible goods. Seepage might be prevented by selling a product to consumers at unique and different points in time for example with the use of time specific airline tickets that cannot be resold under any circumstances.

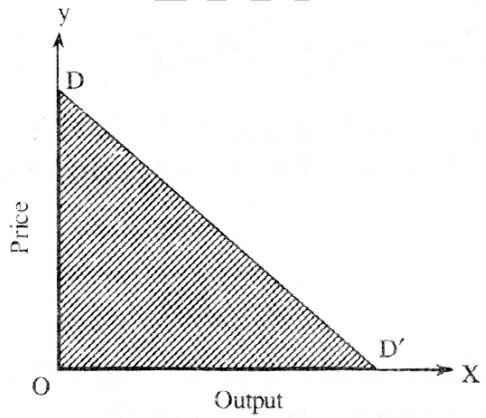
Q19. What are the various degrees of price discrimination ?

Ans :

The degree of price discrimination is ascertained on the basis of he magnitude of the loss of consumers surplus caused by it. The term consumer surplus denotes what the consumer saves by actually paying price less than what he is willing to pay. The loss of consumer surplus takes place because the consumer is required to pay high price now. The size of the loss of consumer surplus depends upon the degree of price discrimination.

First-degree Price Discrimination

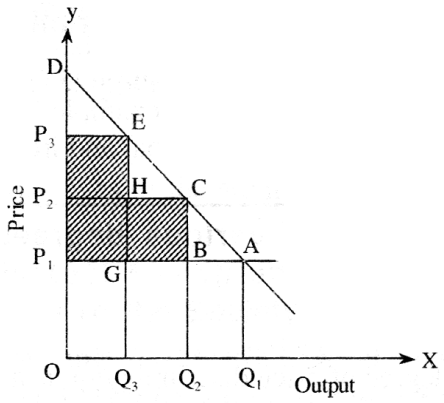
If the monopolist charges different prices from each different consumer, then it is called the first-degree discrimination. In fact, the first degree price discrimination indicates as many prices as many consumers. This type of price discrimination completely wipes out the consumer surplus. It is explained in figure.



Figure

Second-degree Price Discrimination

If the monopolist divides the total market for his product into more than two sub-markets and sells his output at more than two different prices, it is called second-degree price discrimination. The figure explains the second-degree price discrimination. If the monopolist sells his whole output OQ_1 at price P_1 he would receive total revenue $OQ_1 AP_1$ and the consumer surplus DP_1A.

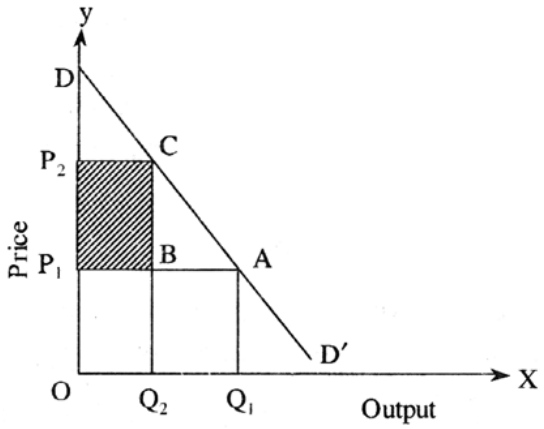


Figure

If the monopolist can sell OQ_3 at P_3 price Q_3Q_2 output at P_2 price and Q_2Q_1 output at P price and Q_2Q_1 output at P price, then his total revenue would be $OQ_3EP_3 + Q_3Q_2CH + Q_1Q_1 AB$. As a result, the loss of consumer surplus increases as denoted by the shaded areas.

Third-degree Price Discrimination

If the monopolist divides the total market for his product into two sub-markets and sells his output at two different prices, it is called third-degree of price discrimination.



Figure

The figure explains the third-degree price discrimination. If the monopolist sells the whole output OQ_1 at price P_1, he would receive total revenue $OQ_1 AP_1$ and consumer surplus is DP_1A.

Let us now assume that the monopolist sells OQ_2 output at price P_2 and the remaining quantity Q_2O_1 at price P_1 then his total revenue would be $OQ_2CP_2 + Q_2Q_1AB$. Thus, as a result of price discrimination the monopolist's total revenue has increased by P_1BCP_2 which represents the loss to consumers. Hence, due to price discrimination the loss of consumer surplus is equal to P_1BCP_2 as denoted by the shaded rectangle.

Q20. Explain various forms of price discrimination ?

Ans :

Forms of Price Discrimination

There are several forms of price discrimination. Some of the common forms of price discrimination are as follows,

1. Personal Discrimination

Based on the economic status of the buyers, different prices are charged to different buyers while providing similar services. For instance, a lawyer charges different fees to different types of clients based on their income status.

2. Age Discrimination

This discrimination is based on the age of the buyers. The buyers are mostly grouped into children and adults. For example, in a barber shop the price charged for children's hair cut will be less than the adult's hair cut.

3. Sex Discrimination

While selling some products, the producers make differences between male and female buyers by charging a low price to female buyers. For example, travel agency may give seats to ladies at concessional rates.

4. Locational or Territorial Discrimination

Locational or geographical discrimination takes place when a monopolist charges different prices in different markets which are located at different places. For example: A firm may make differences between domestic and export markets for its products.

5. Size Discrimination

In size discrimination, different prices are charged on the basis of size or quantity of the product. For example, an economy size washing powder packet is relatively cheaper than a small size packet. In the same way the producers sells the products in retail market at a higher price than in the wholesale market.

6. Quality Variation Discrimination

In this type of variation, different prices may be charged for the same product depending on some qualitative differences. Quality variation is observed in the form of material used, the nature of packing, colors, style, etc. For example, cars with metallic colours have high price than cars with ordinary colours.

7. Special Service or Comforts

Price discrimination is also subjected to the special facilities or comforts. For example, in railways, fare price is different for first class passengers and second class passengers.

8. Use Discrimination

Use discrimination takes place when the price is charged based on the usage of the product. For example, electricity distribution company charges low rates for domestic consumption of electricity whereas high rates for commercial usage of electricity.

9. Time Discrimination

The time factor is also considered in price discrimination. For example, telephone company charges less rate for calls made in night hours.

10. Nature of Commodity Discrimination

Sometimes, price discrimination is made depending on the nature of commodity. For example, freight charges by the railways are different for coal and iron for the same distance.

5.6 Oligopoly Markets

5.6.1 Features of Oligopoly

Q21. Define oligopoly. Explain the features of oligopoly.

Ans : **(Dec.-19, May-18, Dec.-17, Imp.)**

Oligopoly is situation where a few large firms compete against each other and there is an element of interdependence in the decision-making of these firms. Each firm in the oligopoly recognises this interdependence. Any decision one firm makes (be it on price, product or promotion) will affect the trade of the competitors and so results in countermoves. As a result, one's competitor's behaviour depends on one's own behaviour, and this must be taken account of when decisions are made. A major policy change on the part of one firm will have obvious and immediate effects on its competitors.

Definition of Oligopoly

- **According to P.C. Dooley,** "An oligopoly is a market of only a feu) sellers, offering either homogenous or differentiated products. There are so few sellers that they recognise their mutual dependence."
- **According to Mansfield,** "Oligopoly is a market structure characterized by a small number of firms and a great deal of interdependence."
- **According to Grinols, "**An oligopoly is a market situation in which each of a small number of interdependent, competing producers influences but does not control the market".
- **According to Mc Connell,** "Oligopoly is a market situation in which number of firms in an industry is, so small that each must consider the reactions of rivals in formulating its price policy."

Features of Oligopoly

1. Few Firms

Oligopoly is the market in which few firms compete with each other. The simplest model of oligopoly is duopoly. Duopoly is the market structure when only two firms produced and supply the product.

2. Nature of the Product

All the new firms produce an identical product. Such market is called pure or perfect oligopoly. Where product differentiation is there then it is called imperfect oligopoly.

3. Interdependence of Firms

There is interdependence among firms. Each firm threats the other firms as its rivals.

4. Indeterminateness

The oligopoly firm's demand curve for the product is in determinant because the firm cannot assume that the rival firms will not change their prices in response to change in price effected by it.

5. Complex Market Structure

The market structure of oligopoly is quite complex. On one hand there is a rival and on the other hand there may be collusion. Cartel is an example of collusive oligopoly. The non-collusive oligopoly is the other form of complex market structure.

6. Selling Costs

Each firm pursues an aggressive and defensive marketing strategy to gain a greater share in the market. Advertising is an important method used by oligopolist to gain larger share in the market. The costs incurred on advertisements are selling costs.

Q22. Explain the classification of Oligopoly.

Ans :

The oligopoly may be classified in the following categories:

1. Perfect or Imperfect Oligopoly

Perfect oligopoly is that situation in which all the firms produce homogeneous products. It is also known as pure oligopoly. On the other hand imperfect or differentiated oligopoly is that market situation in which all firms produce differentiated but close substitutes.

2. Open or Closed Oligopoly

Open oligopoly is that market situation in which there is no barrier on the entry of the firm in the industry. The entry of the firm is free. But in the situation of closed oligopoly there is barrier on the entry of the firm in the industry. The barrier may be technological, legal or of any other type.

3. Partial or Full Oligopoly

Partial oligopoly is that situation in which there is a dominant firm in the industry. This dominant firm is called the price leader. The dominant firm or the price leader fixes the price and others follow that price. Full oligopoly, on the other hand, is that situation in which there is no dominant firm or price leader.

4. Collusive or Non-collusive Oligopoly

Collusive oligopoly is that oligopoly in which the firms cooperate with each other in determining the price. They follow a common price policy and do not compete with each other. Non-collusive oligopoly is that oligopoly in which the firms act independently. They compete with each other and determine independently the price of their products.

5.6.2 Price and Output Determination in Oligopoly

Q23. How price is determined under collusion oligopoly ?

Ans : **(Dec.-19, May-19, Dec.-17, Imp.)**

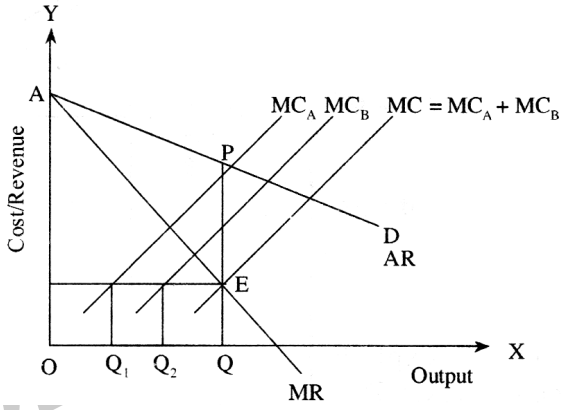
The term collusion implies to play together. The oligopolistic firms arrive at a formal agreement about price-output instead of competing with each other The competing firms form a cartel. The cartel is a common sales agency formed to eliminate competition and fix such a price and quantity of output that will maximise profits of the member firms. The cartel determine the price output for whole of the industry as well as for each member firm. In other words, the cartel administration determines the equilibrium total output as well as equilibrium quantity of output of each member firm. Assumptions of the cartel are as follows.

(i) It is assumed that there are two firms namely A and B. These firms form a cartel.

(ii) The products of firms A and B are homogeneous.

(iii) The costs of production of firms A and B are different.

(iv) The cartel determines such price-output combination which ensures maximum profits for whole of the oligopolistic industry.



Figure

The cartel estimates the total demand for the industry's product. It is signified by the curve-AD in figure. The marginal revenue curve-MR in the diagram shows cartel's revenue from the sale of the additional quantity of output. Cartel's MC curve is the horizontal summation of the marginal cost curves of the firms A and B. The equilibrium of the oligopolistic industry is denoted by E, where MC = MR. The equilibrium force is QP and the equilibrium total output is OQ. Having decided the total output to be produced equal to OQ the cartel allots the output quota to each member firm so that the marginal cost of each firm is the same. This can be determined by drawing a horizontal straight line from E towards the Y-axis. The firm A produces OQ output and the firm B produces OQ output. The total output OQ is equal to $OQ_1 + OQ_2$.

In brief OP price and OQ output ensure joining profits to the members of the cartel or industry.

5.6.3 Syndicating in Oligopoly

Q24. Explain briefly about Syndicating in Oligopoly.

Ans :

The Oligopoly is a market structure wherein few sellers dominate the market and sell the homogeneous or heterogeneous products. This classification is done on the basis of a degree of coordination found among the firms. When the firms come together and sell their products with the common interest is called as a Syndicate Oligopoly. Oligopolies which have centralized selling through syndicates have been characterized as syndicated oligopolies.

Causes of Oligopoly

1. Economies of Scale

The firms in the industry, with heavy investment, using improved technology and reaping economies of scale in production, sales, promotion, etc, will compete and stay in the market.

2. Barrier to Entry

In many industries, the new firms cannot enter the industry as the big firms have ownership of patents or control of essential raw material used in the production of an output. The heavy expenditure on advertising by the oligopolistic industries may also be financial barrier for the new firms to enter the industry.

3. Merger

If the few firms in the industry smell the danger of entry of new firms, they then immediately merge and formulate a joint policy in the pricing and production of the products. The joint action of the few big firms discourages the entry of new firms into the industry.

4. Mutual Interdependence

As the number of firms is small in an oligopolistic industry, therefore, they keep a strict watch of the price charged by rival firms in the industry. The firm generally avoids price ware and tries to create conditions of mutual interdependence.

Effects of Oligopoly

1. Small output and high prices

As compared with perfect competition, oligopolist sets the prices at higher level and output at low level.

2. Restriction on the Entry

Like monopoly, there is a restriction on the entry of new firms in an oligopolistic industry.

3. Prices Exceed Average Cost

Under oligopoly, the firms fixed the prices at the level higher than the A.C. The consumers have to pay more than it is necessary to retain the resources in the industry. In other words, the economy's productive capacity is not utilized in conformity with the consumer's preferences.

4. Lower Efficiency

Some economists argued that there is a low level of production efficiency in oligopoly. There is no tendency for the oligopolists to build optimum scales of plant and operate then at the optimum rates of output. However, the Schumpeterian hypothesis states that there is high tendency of innovation and technological advancement in oligopolistic industries. As a result, the product cost decreases with production capacity enhancement. It will offset the loss of consumer surplus from too high prices.

5. Selling costs

In order to snatch markets from their rivals, the ligopolistic firms may engage in aggressive and extensive sales promotion effort by means of advertisement and by changing the design and improving the quality of their products.

6. Wider Range of Products

As compared with pure monopoly or pure competition, differentiated oligopoly places at the consumer's disposal a wider variety of commodities.

7. Welfare Effect

Under oligopoly, vide sums of money are poured into sales promotion to create quality and design differentiation. Hence, from the

point of view of economic welfare, oligopoly fares fairly badly. The oligopolists push non-price competition beyond socially desirable limits.

Price Determination Under Oligopoly

The price and output behaviour of the firms operating in oligoposlistic or duopolistic market condition can be studied under two main heads:

Price and Output Determination Under Oligopoly

(a) If an industry is composed of few firms each selling identical or homogenous product and having powerful influence on the total market, the price and output policy of each is likely to affect the other appreciably, therefore they will try to promote collusion.

(b) In case there is product differentiation, an oligopolist can raise or lower his price without, any fear of losing customers or of immediate reactions from his rivals. However, keen rivalry among them may create condition of monopolistic competition.

5.7 PRICE DETERMINATION MODELS OF OLGOPOLY

5.7.1 The Kinked Demand Curve

Q25. Explain briefly about kinked demand curve.

Ans : **(Dec.-19, Dec.-17, Imp.)**

Paul Sweezy formulated a model to explain interdependence among firms in the oligopoly market. This model also recognizes the uncertainty of rival's reaction. On the basis of interdependence among firms and uncertainty of rival firm's reaction, this model explains that the oligopoly price is insensitive to market forces. It implies stickness or rigidity of price in the oligopoly market. The explanation of rigidity of price in the oligopoly market has been given in terms of kinked demand curve.

Since an oligopolist does not know how his competitors will react, he has to make guess. That is why oligopoly has been linked to a game where various options are open to the players. An oligopolist may assume that his competitors will follow him, if he increases or decreases the price. Alternatively, he may assume that the price cut by him will be followed by a price cut by the rival firms, but the price rise by him will not be followed by a price rise by the veal firms. This alternative hypothesis is the basis of Kinked demand curve.

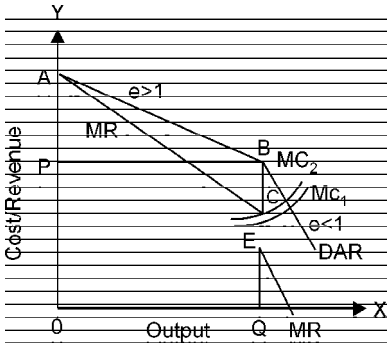
Assumptions of the Kinked Demand Curve

i) There are two firms namely A and B.

ii) Product of both the firms is homo-geneous.

iii) There is a particular price prevailing in the market. It is assumed to be OP as is shown in figure.

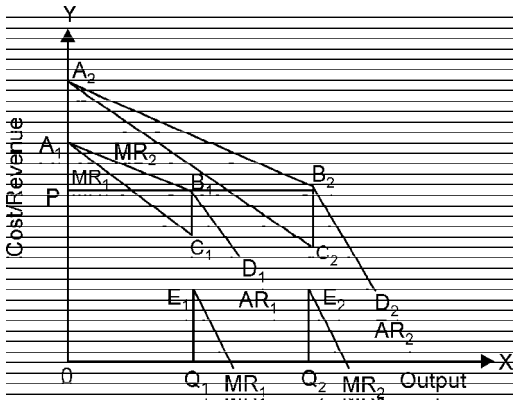
In figure the demand curve-AD is kinked at B with its two segments. The segment AB is relatively greater elastic and the other segment BD is relatively less elastic. Since the demand curve (AR) – AD is discontinuous, so the corresponding MR curve is also not continuous. The MR curve's segment AC corresponds to AR curve's segment AB. The MR curve's segment starting from E corresponds to BD segment of the AR curve.



Assume that the firm A raises the price above the prevailing price OP. Now the firm B will not raise the price. As a result the demand for A's production will decline considerably. So firm A will reduce the price. Hence, the price is rigid at the level of OP.

Assume that the firm A reduces the prices below prevailing price OP. Now firm B reacts by reducing the price so that the firm A may not take away whole of the market. As the firm A has not gained by reducing the price, so it will raise the price to the prevailing level of OP. Hence price is rigid at

OP. The price rigidity or stickness is also established by the fact that any shift in the MC curve also does not affect the price. The price also remains rigid despite shift in the demand curve.



Hence, Paul Sweezay has emphasized the price rigidity as the basic feature of the non-collusive oligopoly. Kinked demand curve is the logical deduction from price rigidity.

5.7.2 Price Leadership

Q26. Write about the price leadership model of oligopoly.

Ans :

According to price leadership model of oligopoly, the leader firm in the market determines the price of the product. The firm which acts as the leader firm is one which is either a low-cost firm, dominant firm or experienced and respected firm. Accordingly, the most common types of leadership are as follows.

(i) Price leadership by a low-cost firm

(ii) Price leadership by a large (dominant) firm

(iii) Barometric leadership (experienced and respected firm).

Kinds of Price Leadership

Three kinds of price leadership are commonly distinguished in the literature,

1. Dominant-firm price leadership
2. Collusive price leadership and
3. Barometric price leadership.

1. Dominant-firm Price Leadership

This model rests on the assumption that the oligopoly industry is composed of one large firm together with many small firms. The large firm is the dominant firm which, if it desires, can drive out its rivals by a price war. To avoid any such possibility, a tacit collusion may be arrived at between the dominant firm and the small firms. This collusion may occur in the form of price leadership by the dominant firm. The dominant firm fixes the price and the small firms act as price-takers. This type of price leadership is also called partial monopoly, as the dominant firm wields more or less monopoly power. Since the small firms can sell any amount of output at the price determined by the leader, each small firm in the industry therefore behaves like a perfectly competitive firm. The dominant firm, on the other hand, supplies the remainder of the market which is not satisfied by the small firms. Thus, although the dominant firm is a price leader, it is a quantity follower.

Determination of profit-maximizing price in this case is shown in figure where D_m is the market demand curve. Since the leader is assumed to have complete knowledge of the supply conditions of the small firms, S_{cf} is the supply curve of the small competitive firms as perceived by the leader. S_{cf} equals the sum of the individual marginal cost curves (portions of MC above the average variable cost curves) of the small firms. At price P_1, the supply of small firms (P_1N) equals the market demand. In other words, the dominant firm would sell nothing at P_1 price. At P_2 price, P_2B is supplied by small firms and BM by the dominant firm. If on the horizontal line P_2M we mark a distance P_2C equal to the share of the dominant firm (i.e., PM), we get a point C on dominant firm's demand curve. In a similar way we may mark the share of the dominant firm at each price and can get a set of points falling on the dominant firm's demand curve (e.g., Point H at price P_3). By joining points like P_1, C, H, etc., we get the dominant firm's demand curve (AR_d). We can then find the corresponding MR_d curve for the dominant firm.

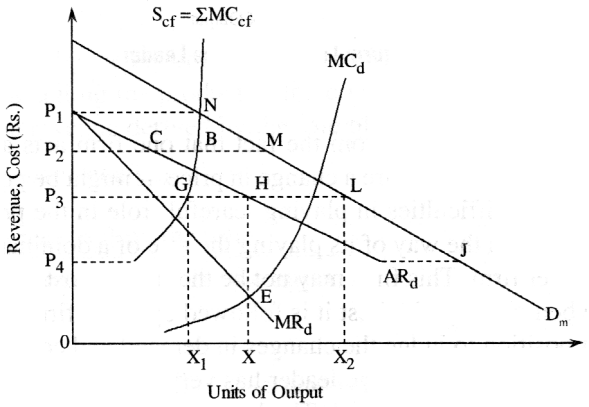


Fig. : Dominant-firm Price Leadership

Note that at price below P_4 small firms do not supply at all, as they would not be able to cover their average variable cost - JD_m portion of the market demand is therefore relevant only to the dominant firm. Thus, the dominant firm's demand curve is the line P_1 AR_d JD_m and the corresponding marginal revenue curve is MR_d.

The dominant firm will maximize its profits where its marginal cost (MC_d) equals its marginal revenue (MR_d). In figure, MC_d = MR_d at point E where equilibrium price of the dominant firm is P_3. The small firm's supply curve shows that at P_3 price they supply P_3G, leaving G_L quantity for the dominant firm to supply.

This situation is essentially one of unstable equilibrium. If the price set by the dominant firm gives profits to small firms in the industry, entry will be encouraged leading to reduction in the share of the dominant firm. If the dominant firm on the other hand, deviates from the pattern of 'leadership in price and followership in quantity' and changes its objective to long-run profits instead of short run profits, the dominant firm will then resort to price cutting which will enable it to put many a small firms out of business, thus enjoying near-monopoly share of the market.

2. Collusive Price Leadership

This is also known as price leadership by the efficient firm. Here, firms with relatively higher costs fear that the competition with the efficient firm will result in price war which may result in the erosion of their market share, and may eliminate them in the long run if the price fell lower than the average cost. In figure, A and B are two firms where firm A is more efficient because of its lower cost. The market demand curve is D. If the two firms agree to split the market equally, each firm faces demand curve d (the curve d shows one-half as much quantity as does demand curve D at each price).

The firm with the lowest cost will charge P_A price, which will be followed by B - the high-cost firm. Each of the firms sells Q_A quantity, which is together equal to Q*. Note that this price, quantity combination maximises profits for firm A but not for firm B. The profit maximising price-quantity combination for firm B would be P_B, Q_B. But firm B will have to be content with price P_A, since if it charges P_B price it would lose customers to firm A. Thus, firm A (the leader) sets the price and firm B (the follower) adopts it. But this price leadership is maintainable only if the follower supplies exactly his quota-share of output (here, half of the total output). Thus, share-of-the market agreements are an integral part of low-cost price leadership.

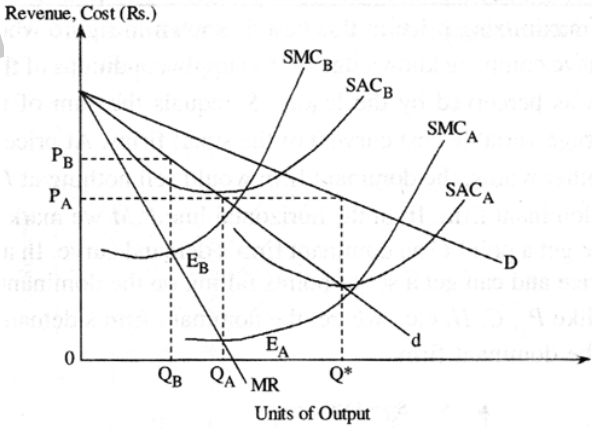


Fig. : Low cost price leader

3. Barometric Price Leadership

Barometric price leadership gets its name from the fact that one firm acts as a 'barometer', reflecting changing market conditions or costs of production that require a change in price. It might be possible that the firm with a large share of the market or a low cost firm finds difficulties in playing 'careful' role in the price manoeuvres. Or, the government regulations like MRTP Act, etc., come in the way of its playing the role of a dominant firm. In such a case, the leadership role may fall to the

share of a smaller firm. This firm may not be the lowest cost firm but it certainly must be an efficient firm. In spite of its market share being not the highest it is followed by other firms. Others in the industry recognize that the barometric firm is in the best position to judge the changes in demand and cost conditions and that its price change is in the best interest of the group. Since the barometric leader has very little power to impose his decisions on other firms in the industry, his leadership may thus be short lived. The barometric price leadership may, therefore, move from one firm to another, or at the worst the price parallelism may even break down.

5.8 MARKET POSITIONING

Q27. What do you understand by market positioning ?

Ans :

Market positioning is an effort to influence consumer perception of a brand or product relative to the perception of competing brands or products. Its objective is to occupy a clear, unique, and advantageous position in the consumer's mind.

Positioning is a marketing concept that outlines what a business should do to market its product or service to its customers. In positioning, the marketing department creates an image for the product based on its intended audience. This is created through the use of promotion, price, place and product. The more intense a positioning strategy, typically the more effective the marketing strategy is for a company. A good positioning strategy elevates the marketing efforts and helps a buyer move from knowledge of a product or service to its purchase.

a) Target Market Analysis

The best start for any positioning analysis is gaining a thorough knowledge of a product or service's target market. This is the group of people or businesses that will best benefit from the use of the product or service. With a good idea of the wants, needs and interests of a product or service's target market, a good marketing team can help develop a positioning statement to help reach as much of the target market as possible.

b) Positioning in Advertisements

Advertisements are usually the first places businesses position themselves. A cosmetics marketing department, for example, must determine who they are targeting and what consumer need is being met. If the intended target is African American teenagers, what type of need should the cosmetics fill? If the cosmetics line is trying to help teenage girls overcome acne issues, the person in the ad might be one of a younger African American physician who teaches girls how to battle acne with the use of these cosmetics. To note the importance of positioning, this same type of advertisement might not work if the intended audience of the cosmetics line was older Caucasian women trying to look younger.

c) Positioning in Sales Locations

Reaching the customer is not simply a matter of advertising; it is also a matter of choosing the right channels for distribution. If a majority of your target market lives in an urban area with only public transportation available to them, having your product in rural areas where a private automobile is needed for transport would not equal sales success. Place or position your product or service as close to the target market as possible. Create similar advertisements in store as the ones seen out of store to create an overall identity for your brand.

d) Positioning through Price

It should be noted that there is a large amount of research on the psychology of pricing in marketing. Simply put, the price of an item tells the buyer more about the item than most realize. Many associate a higher price with higher quality and the opposite with a lower price. Additionally, if a product is positioned as a good alternative to high-priced brands, the marketing department must price it in the middle of the market to avoid a comparison to the cheapest end of the spectrum.

Q28. Explain the strategies of market positioning.

Ans :

Positioning strategies can be conceived and developed in a variety of ways. It can be derived from the object attributes, competition, application, the types of consumers involved, or the characteristics of the product class. All these attributes represent a different approach in developing positioning strategies, even though all of them have the common objective of projecting a favorable image in the minds of the consumers or audience. There are seven approaches to positioning strategies:

1. Using Product characteristics or Customer Benefits as a positioning strategy

This strategy basically focuses upon the characteristics of the product or customer benefits. For example, if I say imported items it basically tells or illustrates a variety of product characteristics such as durability, economy or reliability etc. Let's take an example of motorbikes some are emphasizing on fuel economy, some on power, looks and others stress on their durability. Hero Cycles Ltd. positions first, emphasizing durability and style for its cycle.

At time even you would have noticed that a product is positioned along two or more product characteristics at the same time. You would have seen this in the case of toothpaste market, most toothpaste insists on 'freshness' and 'cavity fighter' as the product characteristics. It is always tempting to try to position along several product characteristics, as it is frustrating to have some good characteristics that are not communicated.

2. Pricing as a positioning strategy

Quality Approach or Positioning by Price-Quality - Lets take an example and understand this approach just suppose you have to go and buy a pair of jeans, as soon as you enter in the shop you will find different price rage jeans in the showroom say price ranging from **350** rupees to **2000** rupees. As soon as look at the jeans of 350 Rupees you say that it is not good in quality. Why? Basically because of perception, as most of us perceive that if a product is expensive will be a quality product where as product that is cheap is lower in quality. If we look at this Price - quality approach it is important and is largely used in product positioning. In many product categories, there are brands that deliberately attempt to offer more in terms of service, features or performance. They charge more, partly to cover higher costs and partly to let the consumers believe that the product is, certainly of higher quality.

3. Positioning strategy based on Use or Application

Let's understand this with the help of an example like Nescafe Coffee for many years positioned itself as a winter product and advertised mainly in winter but the introduction of cold coffee has developed a positioning strategy for the summer months also. Basically this type of positioning-by-use represents a second or third position for the brand, such type of positioning is done deliberately to expand the brand's market. If you are introducing new uses of the product that will automatically expand the brand's market.

4. Positioning strategy based on Product Process

Another positioning approach is to associate the product with its users or a class of users. Makes of casual clothing like jeans have introduced 'designer labels' to develop a fashion image. In this case the expectation is that the model or personality will influence the product's image by reflecting the characteristics and image of the model or personality communicated as a product user. Let's not forget that Johnson and Johnson repositioned its shampoo from one used for babies to one used by people who wash their hair frequently and therefore need a mild people who wash their hair frequently and therefore need a mild shampoo. This repositioning resulted in a market share.

5. Positioning strategy based on Product Class

In some product class we have to make sure critical positioning decisions For example, freeze dried coffee needed to positions itself with respect to regular and instant coffee and similarly in case of dried milk makers came out with instant breakfast positioned as a breakfast substitute and virtually identical product positioned as a dietary meal substitute.

6. Positioning strategy based on Cultural Symbols

In today's world many advertisers are using deeply entrenched cultural symbols to differentiate their brands from that of competitors. The essential task is to identify something that is very meaningful to people that other competitors are not using and associate this brand with that symbol. Air India uses maharaja as its logo, by this they are trying to show that we welcome guest and give them royal treatment with lot of respect and it also highlights Indian tradition. Using and popularizing trade tnarks generally follow this type of positioning.

Q29. Discuss the pricing strategies for a new product.

Ans : **(Dec.-16)**

(i) Penetration Pricing

The price charged for products and services is set artificially low in order to gain market share. Once this is achieved, the price is increased. This approach was used by France Telecom and Sky TV. These companies need to land grab large numbers of consumers to make it worth their while, so they offer free telephones or satellite dishes at discounted rates in order to get people to sign up for their services. Once there is a large number of subscribers prices gradually creep up. Taking Sky TV for example, or any cable or satellite company, when there is a premium movie or sporting event prices are at their highest - so they move from a penetration approach to more of a skimming/premium pricing approach.

(ii) Skimming Pricing

Price skimming sees a company charge a higher price because it has a substantial competitive advantage. However, the advantage tends not to be sustainable. The high price attracts new competitors into the market, and the price inevitably falls due to increased supply.

Manufacturers of digital watches used a skimming approach in the 1970s. Once other manufacturers were tempted into the market and the watches were produced at a lower unit cost, other marketing strategies and pricing approaches are implemented. New products were developed and the market for watches gained a reputation for innovation.

(iii) Competition Pricing

Competitive pricing consists of setting the price at the same level as one's competitors. This method relies on the idea that competitors have already thoroughly worked on their pricing. In any market, many firms sell the same or very similar products, and according to classical economics, the price for these products should, in theory, already be at an equilibrium (or at least at a local equilibrium). Therefore, by setting the same price as its competitors, a newly-launched firm can avoid the trial and error costs of the price-setting process. However, every company is different and so are its costs. Considering this, the main limit of the competitive pricing method is that it fails to account for the differences in costs (production, purchasing, sales force, etc.) of individual companies. As a result, this pricing method can potentially be inefficient and lead to reduced profits.

For example, a firm needs to price a new coffee maker. The firm's competitors sell it at `25, and the company considers that the best price for the new coffee maker is `25. It decides to set this very price on their own product. Moreover, this pricing method can also be used in combination with other methods such as penetration pricing for example, which consists of setting the price below that of its competition (for instance, in this example, setting the price of the coffee maker at `23).

Short Question and Answers

1. Define market

Ans :

The term "market" refers to a particular place where goods are purchased and sold. But, in economics, market is used in a wide perspective. In economics, the term "market" does not mean a particular place but the whole area where the buyers and sellers of a product are spread.

Definition of Market

According to Prof. R. Chapman, "The term market refers not necessarily to a place but always to a commodity and the buyers and sellers who are in direct competition with one another".

According to A.A. Cournot, "Economists understand by the term 'market', not any particular place in which things are bought and sold but the whole of any region in which buyers and sellers are in such free intercourse with one another that the price of the same goods tends to equality, easily and quickly".

According to Benham, "Any area over which buyers and sellers are in such close touch with one another, either directly or through dealers, that the prices obtainable in one part of the market affect the prices paid on other parts".

2. Define perfect competition.

Ans :

A perfectly competitive market is one in which the number of buyers and sellers is very large, all engaged in buying and selling a homogeneous product without any artificial restrictions and possessing perfect knowledge of market at a time, e.g., fruit and vegetable market.

Definition of Perfect Competition

According to A. Koutsoyiannis, "Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms".

According to R.G. Lipsey, "Perfect competition is a market structure in which all firms in an industry are price-takers and in which there is freedom of entry into, and exit from, industry".

3. Advantages of Perfect Competition

Ans :

Advantages of perfect competition can be explained as follows:

i) Consumer Sovereignty

There is consumer sovereignty in a perfect competitive market. The consumer is rational and he has perfect knowledge about the market conditions. Therefore, he will not purchase the products at a higher price.

ii) Beneficial to Consumers

In the perfectly competitive market, the price is equal to the minimum average cost. It is beneficial to the consumer.

iii) Cost-Saving

The perfectly competitive firms are price-takers and the products are homogeneous. Therefore it is not necessary for the producers to incur expenditure on advertisement to promote sales. This reduces the wastage of resources.

iv) Economic Efficiency

In the long-run, the perfectly competitive firm is functioning at the optimum level. This means that maximum economic efficiency in production is achieved. As the actual output produced by the firm is equal to the optimum output, there is no idle or unused or excess capacity.

4. Disadvantages of Perfect Competition

Ans :

Disadvantages of perfect competition can be explained as follows :

i) No Scope for Economies of Scale

This is because there are many small firms producing relatively small amounts. Industries with high fixed costs would be particularly unsuitable to perfect competition. This is one reason why perfect competition is unlikely in the real world.

ii) Homogenous Products

Undifferentiated products are boring giving little choice to consumers. Differentiated products are very important in industries such as clothing and cars.

iii) Insufficient Profits

Lack of supernormal profit may make investment in R & D unlikely this would be important in an industry such as pharmaceuticals which require significant investment.

iv) Free flow of Technology

As there is no patent kind of thing, there is no incentive to develop new technology because it would be shared with other companies.

v) Externalities

If there are externalities in production or consumption there is likely to be market failure without government intervention.

5. Define monopoly

Ans :

A natural monopoly is defined in economics as an industry where the fixed cost of the capital goods is so high that it is not profitable for a second firm to enter and compete. There is a "natural" reason for this industry being a monopoly. It is an extreme imperfect form of market. In ancient times, common salt was responsible for natural monopolies, till the time people learned about winning sea-salt. Regions facing scarcity of transport facilities and storage were most prone to notorious acceleration of commodity prices and uneven distribution of daily-use products and services. The characteristics of monopoly are solitary to the condition generated by intent. Monopoly symbolizes domination over a product to the extent that the enterprise or individual dictates the terms of access and the markets for availability. The term is specific to a seller's market. A similar situation in the buyer's market is referred to as monopsony. It first appeared as an economics-related term in 'Politics' by Aristotle.

Meaning of Monopoly

The term 'Monopoly' has been derived from Greek term 'Monopolies' which means a single seller. Thus, monopoly is a market condition in which there is a single seller of a particular commodity who is called monopolist and has complete control over the supply of his product.

Definition of Monopoly

According to D. Salvatore, "Monopoly is the form of market organisation in which there is a single firm selling a commodity for which there are no close substitutes."

According to Ferguson and Kreps, "A pure monopoly exists when one and only one firm produces or sells the commodity in question. In other words, a monopoly is a one-firm industry"

According to Koutsoyiannis, "Monopoly is a market situation in which there is a single seller, there are no close substitutes for commodity it produces, there are barriers to entry."

In the words of Baumol, "A pure monopoly is defined as the firm that is also an industry. It is the only supplier of some particular commodity for which there exists no close substitute."

6. Define abnormal profit.

Ans :

Abnormal profits means a profits that exceed the amount a firm must receive to become capable of continuing the production. Persistence of abnormal profits in an industry will attract new firms to the business. As a result, the supply will increase and prices will fall which in turn will bring the profit of the business to normal profits. Imposition of conditional barriers for entering into a new business can make the abnormal profits remain in the long-run. It is also called as supernormal profit or economic profit.

7. Define price discrimination.

Ans :

Price discrimination is a pricing strategy that charges customers different prices for the same product or service. In pure price discrimination, the seller will charge each customer the maximum price that he or she is willing to pay. In more common forms of price discrimination, the seller places customers in groups based on certain attributes and charges each group a different price.

Price discrimination allows a company to earn higher profits than standard pricing because it allows firms to capture every last dollar of revenue available from each of its customers. While perfect price discrimination is illegal, when the optimal price is set for every customer, imperfect price discrimination exists. For example, movie theaters usually charge three different prices for a show. The prices target various age groups, including youth, adults and seniors. The pieces fluctuate with the expected income of each age bracket, with the highest charge going to the adult population.

Meaning of Price Discrimination

Price discrimination is the practice of charging a different price for the same good or service. There are three of types of price discrimination first-degree, second- degree and third-degree price discrimination.

Definitions of Price Discrimination

According to Krugman and Paul R., "Price discrimination is a pricing strategy where identical or largely similar goods or services are transacted at different prices by the same provider in different markets or territories".

According to Peter Belobaba and Amedeo Odoni, "Price discrimination is the distinguished from product differentiation by the more substantial difference in production cost for the differently priced products involved in the latter strategy".

8. Define oligopoly.

Ans :

Oligopoly is situation where a few large firms compete against each other and there is an element of interdependence in the decision-making of these firms. Each firm in the oligopoly recognises this interdependence. Any decision one firm makes (be it on price, product or promotion) will affect the trade of the competitors and so results in countermoves. As a result, one's competitor's behaviour depends on one's own behaviour, and this must be taken account of when decisions are made. A major policy change on the part of one firm will have obvious and immediate effects on its competitors.

Definition of Oligopoly

- **According to P.C. Dooley,** "An oligopoly is a market of only a feu) sellers, offering either homogenous or differentiated products. There are so few sellers that they recognise their mutual dependence."
- **According to Mansfield,** "Oligopoly is a market structure characterized by a small number of firms and a great deal of interdependence."
- **According to Grinols, "**An oligopoly is a market situation in which each of a small number of interdependent, competing producers influences but does not control the market".
- **According to Mc Connell,** "Oligopoly is a market situation in which number of firms in an industry is, so small that each must consider the reactions of rivals in formulating its price policy."

9. Features of Oligopoly

Ans :

1. Few Firms

Oligopoly is the market in which few firms compete with each other. The simplest model of oligopoly is duopoly. Duopoly is the market structure when only two firms produced and supply the product.

2. Nature of the Product

All the new firms produce an identical product. Such market is called pure or perfect oligopoly. Where product differentiation is there then it is called imperfect oligopoly.

3. Interdependence of Firms

There is interdependence among firms. Each firm threats the other firms as its rivals.

4. Indeterminateness

The oligopoly firm's demand curve for the product is in determinant because the firm cannot assume that the rival firms will not change their prices in response to change in price effected by it.

5. Complex Market Structure

The market structure of oligopoly is quite complex. On one hand there is a rival and on the other hand there may be collusion. Cartel is an example of collusive oligopoly. The non-collusive oligopoly is the other form of complex market structure.

6. Selling Costs

Each firm pursues an aggressive and defensive marketing strategy to gain a greater share in the market. Advertising is an important method used by oligopolist to gain larger share in the market. The costs incurred on advertisements are selling costs.

10. Syndicating in Oligopoly.

Ans :

The Oligopoly is a market structure wherein few sellers dominate the market and sell the homogeneous or heterogeneous products. This classification is done on the basis of a degree of coordination found among the firms. When the firms come together and sell their products with the common interest is called as a Syndicate Oligopoly. Oligopolies which have centralized selling through syndicates have been characterized as syndicated oligopolies.

11. Kinked demand curve.

Ans :

Paul Sweezy formulated a model to explain interdependence among firms in the oligopoly market. This model also recognizes the uncertainty of rival's reaction. On the basis of interdependence among firms and uncertainty of rival firm's reaction, this model explains that the oligopoly price is insensitive to market forces. It implies stickness or rigidity of price in the oligopoly market. The explanation of rigidity of price in the oligopoly market has been given in terms of kinked demand curve.

Since an oligopolist does not know how his competitors will react, he has to make guess. That is why oligopoly has been linked to a game where various options are open to the players. An oligopolist may assume that his competitors will follow him, if he increases or decreases the price. Alternatively, he may assume that the price cut by him will be followed by a price cut by the rival firms, but the price rise by him will not be followed by a price rise by the veal firms. This alternative hypothesis is the basis of Kinked demand curve.

12. Cartel

Ans :

A cartel is an organization created from a formal agreement between a group of producers of a good or service to regulate supply in order to regulate or manipulate prices. In other words, a cartel is a collection of otherwise independent businesses or countries that act together as if they were a single producer and thus can fix prices for the goods they produce and the services they render, without competition.

13. Transfer pricing

Ans :

Transfer price is the price at which related parties transact with each other, such as during the trade of supplies or labor between departments. Transfer prices are used when individual entities of a larger multi-entity firm are treated and measured as separately run entities. It is common for multi-entity corporations to be consolidated on a financial reporting basis; however, they may report each entity separately for tax purposes.

14. Skimming Price

Ans :

Market Skimming Pricing is a pricing approach in which the producer sets a high introductory price to attract buyers with a strong desire for the product and the resources to buy it, and then gradually reduces the price to attract the next and subsequent layers of the market.

Choose the Correct Answers

1. Which of the following refers to the characteristics of a market that influence the behavior and performance of firms that sell in that market? [d]

   (a) Market power (b) Market conduct

   (c) Market performance (d) Market structure

2. The structure of the market is not based on [d]

   (a) Degree of seller concentration (b) Degree of the buyer concentration

   (c) Degree of product differentiation (d) Condition of exit from the market

3. The lesser the power an individual firm has to influence the market in which it operates, the competitive the market is. [d]

   (a) Less (b) Least

   (c) Low (d) More

4. Perfect competition is based on [d]

   (a) Few numbers of buyers and sellers (b) Heterogenous products and services

   (c) Each firm is a price maker (d) Perfect mobility of factors of production

5. In perfect competition, the industry demand curve represents [c]

   (a) The total demand of all buyers at various prices

   (b) The total demand of all sellers at various prices

   (c) The total demand of all consumers at various prices

   (d) The total demand of all investors at various prices

6. Under perfect competition, the price is equal to [a]

   (a) AR = MR (b) AR > MR

   (c) MR > AR (d) MR not equal to AR

7. A monopolist can either control the price or but not both. [b]

   (a) Cost (b) Output

   (c) Input (d) Profit

8. Based on the number of sellers, imperfect markets are categorized as [d]

(a) Monopsony (b) Duopsony

(c) Oligopsony (d) Monopolistic competition

9. Based on the number of buyers, imperfect markets, markets can be classified as [d]

(a) Monopoly (b) Duopoly

(c) Monopolistic competition (d) Oligopsony

10. Which of the following is said to exist where there are many sellers and there is freedom to enter the market? [d]

(a) Monopoly (b) Duopoly

(c) Oligopoly (d) Monopolistic competition

11. In a perfect competition, the firm's demand curve is also known as [d]

(a) Average price curve (b) Marginal cost curve

(c) Average cost curve (d) Average revenue curve

12. In the short period equilibrium, the price at which the available stock can be sold is called [c]

(a) Standard price (b) Retail price

(c) Market price (d) Normal price

13. Price in the long run is called

(a) Standard price (b) Retail price

(c) Market price (d) Normal price

14. In long run equilibrium, a firm can effect changes to all its factors of production to the cost of production taking the advantage of the latest technology. [d]

(a) Maximize (b) Zero

(c) One (d) Minimize

15. The case of monopoly exists when [c]

(a) MR > AR (b) MR = AR

(c) MR < AR (d) MR not equal to AR

16. Monopoly is not socially desirable as [d]

(a) Efficient allocation of resources

(b) Lessen the gap of rich and poor

(c) Extend the slope for research and development

(d) It leads to exploitation of consumers

17. The nature of demand curve in Monopoly is [c]

(a) Perfect elastic (b) Unit elasticity

(c) Inelastic (d) None of the above

Fill in the Blanks

1. The place or a point at which buyers and sellers negotiate the terms of purchase or sale is called _____.
2. A market in which there is freedom of entry and exit for the traders is called _____.
3. In perfect competition, price and marginal revenue are _____.
4. In a perfect market, there is perfect _____ offactors of production.
5. The market with a single buyer is called _____.
6. The market with many producers, each producing a differentiated product, is called _____.
7. The market with a few sellers is called _____
8. The point of intersection between the demand and supply curves gives rise to _____ price.
9. The main features of monopolistic competitions _____
10. In monopoly, the marginal revenue is less than _____
11. A monopolist can continue to sell as long as his marginal revenue _____ marginal cost.
12. The seller is a _____ (price maker/price taker) in perfect competition.
13. In a _____ competition, the products are similar but not identical.

ANSWERS

1. Market
2. Perfect market
3. One and the same
4. Mobility
5. Monopsony
6. Monopolistic competition
7. Oligopoly
8. Equilibrium
9. Product differentiations
10. Average revenue
11. Exceeds
12. Price taker
13. Monopolistic

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

August - 2021

BUSINESS ECONOMICS

Time : 2 Hours] **[Max. Marks : 80**

PART - A (4 × 5 = 20 Marks)

Note: Answer any four questions. **Answers**

1. Equi-Marginal Principle **(Unit-I, Q.No.17)**
2. Discounting Principle **(Unit-I, Q.No.16)**
3. Income Elasticity of Demand **(Unit-II, SQA-9)**
4. Determinants of Supply **(Unit-II, Q.No.31)**
5. Iso-Quant Curve **(Unit-III, SQA-11)**
6. Budget Line **(Unit-IV, SQA-1)**
7. Economies of Scope **(Unit-IV, SQA-10)**
8. Kinked Demand Curve **(Unit-V, SQA-11)**

PART - B (4 × 15 = 60 Marks)

Note: Answer any four questions.

9 How business economics helps in organizing the business efficiently & economically? Explain. **(Unit-I, Q.No. 1,4,6)**

10 Write short notes on:

(i) Forward Planning **(Unit-I, Q.No. 21)**

(ii) Opportunity Cost **(Unit-I, Q.No. 13)**

11. What are various methods of calculating Elasticity of Demand? Explain. **(Unit-II, Q.No. 21)**
12. Explain Law of Demand with its exceptions. **(Unit-II, Q.No. 9,10)**
13. Explain various stages of the Laws of Return to Scale. **(Unit-III, Q.No. 14)**
14. "The law of diminishing returns will occur ultimately in long run in the production process". Why? Explain the reasons. **(Unit-III, Q.No. 12)**
15. Explain various short run Cost Curves with diagram. **(Unit-IV, Q.No. 10)**
16. Explain the concept of diseconomies of scale with reason. **(Unit-IV, Q.No. 15)**
17. What is Perfect Competition Market? How pride determined in this market. **(Unit-V, Q.No. 4,5)**
18. What is Cartel? Explain various features of Oligopoly Market. **(Unit-V, Q.No. 21)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) (New) Examination

November / December - 2020

BUSINESS ECONOMICS

Time : 2 Hours] **[Max. Marks : 80**

PART - A (4 × 5 = 20 Marks)

Note: Answer any four questions.

ANSWERS

1. Business Economics **(Unit-I, SQA-1)**
2. Incremental Cost **(Unit-IV, SQA-5)**
3. Elasticity of Demand **(Unit-II, SQA-7)**
4. Production Function **(Unit-III, SQA-2)**
5. Average Variable Cost **(Unit-IV, SQA-11)**
6. Internal Economics **(Unit-IV, Q.No.14)**
7. Perfect Competition **(Unit-V, SQA-2)**
8. Cartel **(Unit-V, SQA-12)**

PART - B (4 × 15 = 60 Marks)

Note: Answer any four questions.

9. Explain how the nature & scope of Business Economics. **(Unit-I, Q.No. 6,7)**
10. Write short note on :
    (i) Opportunity cost **(Unit-I, Q.No. 13)**
    (ii) Time perspective **(Unit-I, Q.No. 15)**
11. What do you mean by elasticity of demand ? Explain various types of elasticity of demand. **(Unit-II, Q.No. 11,13,16,18)**
12. What is Law of supply? Explain the determinants of supply as per supply function. **(Unit-II, Q.No. 32,35,30)**
13. Explain the Law of diminishing returns to scale. What are the factors responsible for the occurrence of this law ? **(Unit-III, Q.No. 12)**
14. What is an isoquant curve ? State its properties. **(Unit-III, Q.No. 16,17)**
15. Explain various types of costs that exist in short run & long run. **(Unit-IV, Q.No. 5)**
16. Explain the concept of economies of scale in detail. **(Unit-IV, Q.No. 14)**
17. What is monopolistic competition market ? How the price is determine in this market situation ? **(Unit-V, Q.No. 15,16)**
18. What is meant by monopoly market ? How the price is determined in this market form. **(Unit-V, Q.No. 8,10,11)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

November / December - 2019

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

Note: Answer all the questions.

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

1. Answer any five of the following in about 20 lines each.

(a) Discounting Principles **(Unit-I, SQA-7)**

(b) Elasticity of Demand **(Unit-II, SQA-7)**

(c) Ridgeline **(Unit-III, SQA-15)**

(d) Historical Cost **(Unit-IV, SQA-12)**

(e) Monopolistic **(Unit-V, Q.No.15)**

(f) Equi-marginal Principle **(Unit-I, Q.No.17)**

(g) Gibber Goods **(Unit-II, SQA-5)**

(h) Out of Pocket Cost **(Unit-IV, SQA-13)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note: Answer all the questions using the internal choice.

2. (a) How business economies helps managers in the decision making ? **(Unit-I, Q.No. 8)**

(OR)

(b) Compare and contrast between time perspective and discounting method. **(Unit-I, Q.No. 20)**

3. (a) What is meant by demand ? Explain the important determinants of demand. **(Unit-II, Q.No. 1,8)**

(OR)

(b) Describe the methods of demand forecasting for established products. **(Unit-II, Q.No. 27)**

4. (a) Explain the following concepts.

(i) Production function **(Unit-III, Q.No. 3)**

(ii) Least-cost input combination **(Unit-III, Q.No. 9)**

(OR)

(b) Explain the process of determining graphically the least cost input combination in case of two inputs and single output production system. **(Unit-III, Q.No. 12)**

5. (a) Explain the following with suitable examples:
   (i) Diseconomics **(Unit-IV, Q.No. 15)**
   (ii) Internal economics **(Unit-IV, Q.No. 14)**
   (iii) External economics **(Unit-IV, Q.No. 14)**

   (OR)

   (b) Discuss any 2 phases of cost concept of your choice. **(Unit-IV, Q.No. 5)**

6. (a) Explain the features of Oligopoly. How price and output decision are taken under Oligopoly? **(Unit-V, Q.No. 21,23)**

   (OR)

   (b) Explain the following with suitable example:
   (i) Kinked demand curve **(Unit-V, Q.No. 23)**
   (ii) Monopoly **(Unit-V, Q.No. 8)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

May / June - 2019

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

Note: Answer all the questions.

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

Answer any five of the following in about 20 lines each.

1. Product differentiation **(Unit-III, SQA-16)**
2. Iso-cost curves **(Unit-III, SQA-13)**
3. Giffen's Paradox **(Unit-II, SQA-5)**
4. Demand Function and its uses **(Unit-II, SQA-2)**
5. Cobb-Douglas production function **(Unit-III, SQA-4)**
6. Elasticity of Supply **(Unit-II, SQA-13)**
7. Incremental cost and marginal cost **(Unit-I, Q.No. 14)**
8. Features of Oligopoly **(Unit-V, SQA-9)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note: Answer all the questions using the internal choice.

9. (a) Define managerial economics. Explain the importance and practical significance of managerial economics. **(Unit-I, Q.No. 1,4)**

(OR)

(b) Write short notes on :

(i) Opportunity Cost **(Unit-I, Q.No. 13)**

(ii) Discounting Principle **(Unit-I, Q.No. 16)**

(iii) Equi-marginal Rule **(Unit-I, Q.No. 17)**

10. (a) Explain the determinants of demand for household refrigerator or television set.

Ans :

(i) Demographic factors such as age, sex, size of the population have impact on the demand of the consumer durable goods.

(ii) The goods which have their demand for a specific period reach the saturation stage when a consumer once purchases it.

(iii) Some consumer durable goods require facility to exist and flourish in the market.

(iv) Demand for consumer durable goods can be % divided into new demand and replacement demand. New demand arises with the new customers entering into the market while replacement demand comes from already existing goods.

(v) Change in the income level of the consumer.

(vi) The credit policies also affect the demand of the consumer durable goods. Higher the credit offer, higher will be the demand for the goods. Change in policies will have influence on the demand for the product.

(vii) Demand for many goods depends upon the tastes, habits and preferences of the consumer.

(OR)

(b) Define elasticity of demand. Explain its role in business decision. **(Unit-II, Q.No. 15)**

11. (a) Explain law of variable proportions. **(Unit-III, Q.No. 12)**

(OR)

(b) Define Isoquant. Explain the characteristics of isoquants. **(Unit-III, Q.No. 16,18)**

12. (a) Explain the construction and concept of long-run cost curve. Why does its shape matters ? **(Unit-IV, Q.No. 11)**

(OR)

(b) Distinguish economies from diseconomies of scale and suggest possible causes of each. **(Unit-IV, Q.No. 14)**

13. (a) Explain the equilibrium of a firm under perfect competition. **(Unit-V, Q.No. 5)**

(OR)

(b) How is equilibrium of a firm determined under oligopoly. **(Unit-V, Q.No. 23)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

November / December - 2018

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

Note: Answer all the questions.

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

Answer any five of the following questions.

1. Transfer pricing **(Unit-V, SQA-13)**
2. Indifference curve **(Unit-I, SQA-10)**
3. Equi-Marginal principle **(Unit-I, Q.No.17)**
4. Derived Demand **(Unit-II, SQA-14)**
5. Law of Supply **(Unit-II, Q.No.32)**
6. Economics of Scope **(Unit-IV, SQA-10)**
7. Kinked Demand Curve **(Unit-V, SQA-11)**
8. Market Positioning **(Unit-V, Q.No.27)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note: Answer all the questions using the internal choice.

9. (a) Define Managerial Economics ? Discuss the nature and scope of managerial economics. **(Unit-I, Q.No. 1,6,7)**

(OR)

(b) Explain the incremental concept and state its importance. **(Unit-I, Q.No. 14)**

10. (a) Define Price Elasticity of Demand and distinguish its various types. Discuss the role of price elasticity of demand in Managerial Decisions. **(Unit-II, Q.No. 13,14)**

(OR)

(b) What is Law of Demand? Discuss exceptions to law of demand. **(Unit-II, Q.No. 9,10)**

11. (a) Define production function. Explain the nature and managerial uses of production function. **(Unit-III, Q.No. 3,4,5)**

(OR)

(b) Explain the law of diminishing marginal returns. **(Unit-III, Q.No. 12)**

12. (a) Explain economics and diseconomies to scale. **(Unit-IV, Q.No. 14,15)**

(OR)

(b) Discuss briefly the different cost concepts relevant to managerial decision on planning and control. **(Unit-IV, Q.No. 5)**

13. (a) What is Monopoly? Explain how the price and output are determined. **(Unit-V, Q.No. 8,10)**

(OR)

(b) What is meant by Monopolistic Competition? Discuss the behaviour of the firm under Monopolistic Competition. **(Unit-V, Q.No. 15,16)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

May / June - 2018

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

Note: Answer all the questions.

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

1. Answer any five of the following questions.

(a) Incremental cost **(Unit-I, Q.No.14)**

(b) Opportunity cost concept **(Unit-I, SQA-5)**

(c) Supply curve **(Unit-II, Q.No.32)**

(d) Giffen's paradox **(Unit-II, SQA-5)**

(e) Explicit costs **(Unit-IV, SQA-13)**

(f) Marginal product **(Unit-III, SQA-17)**

(g) Perfect competition **(Unit-V, SQA-2)**

(h) Kinked demand curve **(Unit-V, SQA-11)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note: Answer all the questions using the internal choice.

2. (a) Explain the nature and scope of business economics. **(Unit-I, Q.No. 6,7)**

(OR)

(b) Distinguish principle of time perspective from discounting principle. **(Unit-I, Q.No. 20)**

3. (a) What is demand? Explain different types of demand. **(Unit-II, Q.No. 1,2)**

(OR)

(b) What do you mean by the term supply ? What is supply function? **(Unit-II, Q.No. 28,30)**

4. (a) Define production. Explain law of diminishing marginal returns to scale. **(Unit-III, Q.No. 1,12)**

(OR)

(b) Explain assumption and properties of isoquant curves. **(Unit-III, Q.No. 16,17)**

5. (a) Explain and illustrate diagrammatically the short-run cost curves of a firm. **(Unit-IV, Q.No. 10)**

(OR)

(b) Explain the various forms of internal and external economics of scale. **(Unit-IV, Q.No. 14)**

6. (a) Explain market classification based on structure. **(Unit-V, Q.No. 2,3)**

(OR)

(b) Define oligopoly? Explain feature of oligopoly. **(Unit-V, Q.No. 21)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

December - 2017

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

Note: Answer all the questions.

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

1. Answer any five of the following questions.

(a) Principle of time perspective **(Unit-I, Q.No.15)**

(b) Demand function **(Unit-II, SQA-2)**

(c) Returns to scale **(Unit-III, SQA-9)**

(d) Sunk costs **(Unit-IV, SQA-14)**

(e) Elasticity of supply **(Unit-II, SQA-13)**

(f) Average product **(Unit-III, SQA-18)**

(g) Oligopoly **(Unit-V, SQA-8)**

(h) Price discrimination **(Unit-V, SQA-7)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note: Answer all the questions using the internal choice.

2. (a) Define Managerial Economics. Describe is scope, importance and practical significance. **(Unit-I, Q.No. 1,4,7)**

(OR)

(b) Write short notes on,

(a) Discounting **(Unit-I, Q.No. 16)**

(b) Equi-marginal principle. **(Unit-I, Q.No. 17)**

3. (a) What are the determinants of demand for durable consumer goods ? **(Unit-II, Q.No. 8)**

(OR)

(b) What is law of supply ? Discuss exceptions to law of supply. **(Unit-II, Q.No. 32)**

4. (a) What is meant by production? Explain the concept of production function by taking a single product. **(Unit-III, Q.No. 3,10)**

(OR)

(b) Explain the laws of return to scale. **(Unit-III, Q.No. 14)**

5. (a) Drive the long run cost curve of a firm and explain about its U-shape. **(Unit-IV, Q.No. 11)**

(OR)

(b) Explain internal economies of scale. **(Unit-IV, Q.No. 14)**

6. (a) What is meant by monopoly price discrimination? State the conditions for or discrimination. **(Unit-V, Q.No. 8,10,11)**

(OR)

(b) What is Oligopoly? Explain price rigidity under oligopoly with the help of Kink demand curve analysis. **(Unit-V, Q.No. 21,25)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

December - 2016

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

PART - A (5 × 4 = 20 Marks)

[Short Answer Type]

ANSWERS

Answer any five of the following questions.

1. Marginal Cost **(Unit-IV, SQA-8)**
2. Discounting Principle **(Unit-I, SQA-7)**
3. Demand Contraction **(Unit-II, SQA-15)**
4. Cross Elasticity of Demand **(Unit-II, Q.No.18)**
5. Semi-Variable Cost **(Unit-IV, SQA-15)**
6. Iso-Costs **(Unit-III, SQA-13)**
7. Monopoly **(Unit-V, SQA-5)**
8. Skimming Price **(Unit-V, SQA-14)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer Type]

Note: Answer all the questions using the internal choice.

9. (a) "Business Economics is Micro in Nature". Explain. **(Unit-I, Q.No. 5)**

(OR)

(b) Write the short notes for the following :

(i) Opportunity Cost **(Unit-I, Q.No. 13)**

(ii) Discounting Principle **(Unit-I, Q.No. 16)**

10. (a) What is Law of Demand? Write exceptions to Law of Demand. **(Unit-II, Q.No. 9,10)**

(OR)

(b) Write different elasticity of supply. **(Unit-II, Q.No. 33)**

11. (a) Explain law of returns to scale (long-term) **(Unit-III, Q.No. 14)**

(OR)

(b) Explain Isocost and Budget Line. **(Unit-III, Q.No. 20 & Unit-IV, Q.No. 1)**

12. (a) Write the classification of costs. **(Unit-IV, Q.No. 5)**

(OR)

(b) Experience curve is also a learning curve. Justify. **(Unit-IV, Q.No. 13)**

13. (a) Write the causes of monopoly and price discrimination under monopoly. **(Unit-V, Q.No. 8,10,11)**

(OR)

(b) Discuss the pricing strategies for a new product. **(Unit-V, Q.No. 29)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

Model Paper - I

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

PART - A (4 × 5 = 20 Marks)

Note: Answer any four questions. **Answers**

1. (a) Define business economics? **(Unit-I, SQA-1)**
   (b) Define opportunity cost. **(Unit-I, SQA-5)**
   (c) Supply **(Unit-II, SQA-11)**
   (d) Derived Demand **(Unit-II, SQA-14)**
   (e) Define production function? **(Unit-III, SQA-2)**
   (f) Increasing Returns to Scale. **(Unit-III, SQA-10)**
   (g) Marginal Cost (MC) **(Unit-IV, SQA-8)**
   (h) Cartel **(Unit-V, SQA-12)**

PART - B (4 × 15 = 60 Marks)

Note: Answer any four questions.

2. (a) Explain the importance and practical significance of managerial economics. **(Unit-I, Q.No. 4)**

   OR

   (b) What do you understand by discounting principle. **(Unit-I, Q.No. 16)**

3. (a) Explain the factors determining demand? **(Unit-II, Q.No. 8)**

   OR

   (b) Describe the methods of demand forecasting for established products. **(Unit-II, Q.No. 27)**

4. (a) Explain input-output relationship of production function. **(Unit-III, Q.No. 9)**

   OR

   (b) Define and explain isocost curve with the help of isocost diagrams. **(Unit-III, Q.No. 20)**

5. (a) Discuss briefly the different cost concepts relavant to managerial decision on planning and control. **(Unit-IV, Q.No. 5)**

   OR

   (b) Define CVP Analysis. What are the objectives of CVP Analysis. **(Unit-IV, Q.No. 7)**

6. (a) What is monopolistic competition? Explain the features of monopolistic competition. **(Unit-V, Q.No. 15)**

   OR

   (b) How price is determined under collusion oligopoly ? **(Unit-V, Q.No. 23)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

Model Paper - II

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

PART - A (4 × 5 = 20 Marks)

Note: Answer any four questions. **Answers**

1. (a) Discounting principle. **(Unit-I, SQA-7)**
   (b) Consumers surplus. **(Unit-I, SQA-9)**
   (c) Define supply function. **(Unit-II, SQA-12)**
   (d) Define law of Demand. **(Unit-II, SQA-4)**
   (e) Cobb Douglas production function. **(Unit-III, SQA-4)**
   (f) Product differentiation **(Unit-III, SQA-16)**
   (g) Budget Line **(Unit-IV, SQA-1)**
   (h) Skimming Price **(Unit-V, SQA-14)**

PART - B (4 × 15 = 60 Marks)

Note: Answer any four questions.

2. (a) Explain briefly about equi-marginal principle. **(Unit-I, Q.No. 17)**

   OR

   (b) Distinguish principle of time perspective from discounting principle. **(Unit-I, Q.No. 20)**

3. (a) What is price elasticity of demand? Explain different types of price elasticity of Demand? **(Unit-II, Q.No. 13)**

   OR

   (b) Describe the methods of demand forecasting for established products. **(Unit-II, Q.No. 27)**

4. (a) What are the different stages of law of variable proportion. **(Unit-III, Q.No. 12)**

   OR

   (b) Define isoquant. Explain how isoquants are used to represent a production function with two variable inputs. **(Unit-III, Q.No. 16)**

5. (a) Explain Cost-Output Relationship in the Short-Run . **(Unit-IV, Q.No. 10)**

   OR

   (b) Explain briefly about economies of scale. **(Unit-IV, Q.No. 14)**

6. (a) How is price output determined under monopolistic competition ? **(Unit-V, Q.No. 16)**

   OR

   (b) Discuss the pricing strategies for a new product. **(Unit-V, Q.No. 29)**

FACULTY OF MANAGEMENT

B.B.A I - Semester (CBCS) Examination

Model Paper - III

BUSINESS ECONOMICS

Time : 3 Hours] **[Max. Marks : 80**

PART - A (4 × 5 = 20 Marks)

Note: Answer any four questions. **Answers**

1. (a) What is indifference curve? **(Unit-I, SQA-10)**
   (b) Objectives of business economics. **(Unit-I, SQA-2)**
   (c) Demand Function. **(Unit-II, SQA-2)**
   (d) Giffen Goods **(Unit-II, SQA-5)**
   (e) Ridgeline **(Unit-III, SQA-15)**
   (f) Returns to Scale. **(Unit-III, SQA-9)**
   (g) Define cost function. **(Unit-IV, SQA-3)**
   (h) Transfer pricing **(Unit-V, SQA-13)**

PART - B (4 × 15 = 60 Marks)

Note: Answer any four questions.

2. (a) Explain the nature of business economics. **(Unit-I, Q.No. 6)**

   OR

   (b) Explain briefly about incremental principle concept. **(Unit-I, Q.No. 14)**

3. (a) What do you understand by law of supply? Explain the assumptions and exceptions of law of supply. **(Unit-II, Q.No. 32)**

   OR

   (b) Define law of Demand? What are the assumptions of law of demand. **(Unit-II, Q.No. 9)**

4. (a) Explain briefly about Returns to Scale. **(Unit-III, Q.No. 14)**

   OR

   (b) What do you understand by Marginal Rate of Technical Substitution (MRTS). **(Unit-III, Q.No. 21)**

5. (a) Explain Cost-Output Relationship in the Long-Run. **(Unit-IV, Q.No. 11)**

   OR

   (b) Distinguish between economies and diseconomies of scale. **(Unit-IV, Q.No. 16)**

6. (a) Explain briefly about kinked demand curve. **(Unit-V, Q.No. 25)**

   OR

   (b) Distinguish between Perfect Competition and Monopoly. **(Unit-V, Q.No. 14)**