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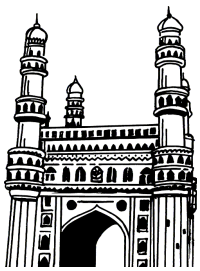

M.B.A.

I Semester

(Osmania University)

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UNIT I

Introduction to managerial functions, nature and scope of managerial economics, relation with other subjects, fundamentals concepts of Managerial Economics, Decision Making Process, Decision making under certainty, uncertainty and Risk, Role and Functions of Managerial Economist, Use of Econometric Models.

1.1 Introduction to Managerial Economics

Q1. Define Managerial Economics.

(OR)

What is Managerial Economics.

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

Meaning

Managerial economics is a discipline which deals with the application of economic theory to business management. It deals with the use of economic concepts and principles of business decision making.

Formerly it was known as "Business Economics" but the term has now been discarded in favour of Managerial Economics. Managerial Economics is often called as Business Economics or Economic for Firms.

Managerial economics is a branch of economics that applies microeconomic analysis to decision methods of businesses or other management units.

Definitions

Managerial economics has been defined by different scholars as follows.

1. **According to Spencer and Siegelman** "Managerial economics is the integration of economic theory with business practice for the purpose of facilitating decision-making and forward planning by management"
2. **According to Mc Nair and Meriam** "Managerial economics is the use of economic models of thought to analyze business situations"
3. **According to Brigham and Pappas** "Managerial economics is the application of economic theory and methodology to business administration practice"

Managerial economics by nature is a specialized discipline of management studies that deals with the application of economic theory, tools and methodologies to business management practice.

Management economics has evolved as an integration of economic theory and decision sciences with business management.

Q2. Explain the features of Robbins definition of economics.

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

In his landmark essay on the nature of economics, Lionel Robbins defined economics as

"The science which studies human behaviour as a relationship between ends and scarce means which have alternative uses"

The features of Robbin's definition are:

1. Human wants are unlimited

The scarcity definition of Economics states that human wants are unlimited. If one want is satisfied, another want crops up. Thus, different wants appear one after another.

2. Limited means to satisfy human wants

Though wants are unlimited, yet the means for satisfying these wants are limited as the resources required to meet these wants are limited in number.

3. Efficient use of scarce resources

Wants are unlimited and are to be considered in order of importance. On the basis of such importance, scarce resources are to be used in an efficient method for the satisfaction of these wants.

4. Need for choice and optimization

Wants are to be categorized as the most essential and the least essential wants. Economics is also called a science of choice. Hence, scarce resources are to be used for the maximum satisfaction of the essential human wants.

1.1.1 Nature and Scope of Managerial Economics

Q3. Examine the Nature and Scope of Managerial Economics.

(OR)

Describe the Nature and Scope of Managerial Economics.

(OR)

Explain the Nature and Scope of Managerial Economics.

(OR)

Discuss the Nature and Scope of Managerial Economics.

Ans : **(Jan.-21, Aug.-17)**

Nature

1. Managerial economics is confined only to a part of business management but it is not directly concerned with the managerial problems involving control, implementation, conflict resolution and other management strategies.
2. Managerial economics mainly relies on the sound framework of traditional economics and decision sciences in analyzing the problems in a business. It mainly relies on the application of economic principles and methodologies for business decision-making.
3. Managerial economics is mainly micro-economic in nature. Microeconomics is that branch of economics which deals with the individual units or sections (a person, a firm or a group of persons or firms) of an economy. As managerial economics is mainly concerned with analyzing and finding optimal solutions to the problems of decision-making in a business firm, it is essentially micro economic in nature.
4. Managerial economics is pragmatic i.e., it is a practical subject. It prevents the abstract issues of economic theory and incorporates complications that are not covered by the economic theory inorder to analyze the situation in which managers take decisions.
5. Managerial economics falls into normative economics. Economics can be classified into two broad categories namely positive and normative. Positive economics describes 'what is' i.e., observed economic phenomenon. The statement "Poverty in India is very high" is an example of positive economics. Normative economics describes 'what ought to be" i.e., it differentiates the ideal from the actual. An example of normative economics is the statement "People who earn high incomes ought to pay more incomes tax than people who earn low incomes".

Scope

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 Fore-casting

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.

Q4. Compare and contrast managerial economics and traditional economics.

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

Traditional Economics	Managerial Economics
1. Traditional economics is both micro-economics and macroeconomics in nature.	1. Managerial economics is only microeconomic in nature.
2. Traditional economic as 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 sciences.	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 consider 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 of a firm.	6. Managerial economics is concerned with decision making of a firm.

Q5. Explain the significance of managerial economics.

Ans :

Managerial Economics is a useful subject. In fact is the most significant of all social sciences. Its study is highly useful for analyzing and understanding the various economic problems. Its study brings utility to all sections of the people.

Managerial Economics became the intellectual region of the day. Managerial Economics is described as both light giving and fruit bearing science. It enriches our knowledge and brings utility or significance. Managerial Economics is explained from the following points :

A) Theoretical Significance

1. Understanding the Economic Behavior

The study of Managerial Economics help us to understand the economic behavior of human beings.

2. Working of the Economic System

Managerial Economics explains the conditions which influence the progress of the economy. It makes suggestions for overcoming the complicated problems faced by the people and the government in various economic systems. Hence it has great significance for understanding the working of the economic system.

3. Intellectual value

The study of Managerial Economics sharpens the intellectual calibers of individuals. It imparts certain qualities like rational behavior, proper allocation of resources etc.,

4. Economics Tools

Mrs. John Robinson described economics as a box of economic tools. It provides a good knowledge regarding the nature, causes, effects of various economic phenomena.

5. Economic Growth

managerial Economics suggests various ways and means for maintaining the growth rates in the developed economies. It also analyses the factors obstructing the economic growth of these countries.

6. Economic Development

Developing countries aim at achieving economic development with in a short span of time. Managerial Economics enables us to understand the nature and conditions necessary for the successful organizations of business firm.

7. Performance of the Economy

Managerial Economics helps us to asses the performance of the economy. We can judge the position, progress and future of an economy through several theories and models of Managerial Economies.

8. Economic Planning

Economics planning is an important branch of economics. Economics provides a good knowledge and information regarding the techniques of economic planning. It sharpens our mental abilities by clearly explaining the types, aims and objectives of economic plans.

9. Prediction

Managerial Economics serve as the best means for predicting the economic events. It helps us to predict the consequence of various economic phenomena.

10. Ethical Value

Managerial Economics indicates certain ethical norms like honesty, responsibility and adjustability etc., It upholds the moral and cultural values of individual. It makes them honest and dignified citizens.

B) Practical Significance

1. Useful of the Finance Minister

The study of Managerial Economics is highly useful to the finance minister and the personal working in the finance department. It provides a good knowledge about public revenue, public debt and public expenditure. It helps them in forming a sound financial policy and result oriented budget.

2. Useful to the Minister for Planning

The study of Managerial Economics is also useful to the minister for planning It furnishes a good knowledge about the various types of plans. Mobilization, plan implementation, capital output ratio, investment strategy etc.,

3. Useful to the Bankers

Managerial Economics is also useful to the bankers. It enables them to understand the nature, purpose and implications of different economic policies implemented by the business firms.

4. Trade Union Leaders

Knowledge of Managerial Economics is also significant for the trade union leaders. The study of Managerial Economics helps the trace union leaders to understand the nature and causes of industrial disputes, wages problems etc.,

5. Businessmen

Economics is also useful to the businessmen. Businessmen with the help of Managerial Economics can study the fluctuations in business, prices, production and employment. They can adopt a proper strategy for producing goods and services according to the charges in demand.

6. Statesmen

Statesman will also get benefit by studying managerial economics. It enables them to understand the nature an causes of economic problems. It helps them to solve the economic problems like unemployment, inflation, scarcity of goods etc.,

7. International Economic Problems

International economics as an important branch of economics. It deals with the matters like terms of trade, balance of payments, export and import regulations etc., Its knowledge enables the international agencies to determine the foreign exchange value of various national currencies. Thus, managerial economics has both theoretical and practical significance. Its study is useful to all sections of the people.

Q6. "Managerial economics is prescriptive rather than descriptive". Discuss.

Ans :

Economics studies various economic activities of mankind. 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.

Q7. Explain the characteristics of managerial economics.

Ans :

It be useful to point out certain chief characteristics of Managerial Economics, inasmuch as they throw further light on the nature of the subject-matter and help in a clearer understanding thereof.

- First, Managerial Economics is micro-economic in character. This is because the unit of study is a firm; it is the problems of a business firm which are studied in it. Managerial Economics does not deal with the entire economy as a unit of study.
- Secondly, Managerial Economics largely uses that body of economic concepts and principles which is known as Theory of the Firm' or 'Economics of the Firm'. In addition, it also seeks to apply Profit Theory which forms part of Distribution Theories in Economics.
- Thirdly, Managerial Economics is pragmatic. It avoids difficult abstract issues of economic theory but involves complications ignored in economic theory to face the overall situation in which decisions are made. Economic theory appropriately ignores the variety of backgrounds and training found in individual firms but Managerial Economics considers the particular environment of decision-making.
- Fourthly, Managerial Economics belongs to normative economics rather than positive economics (also sometimes known as descriptive economics). In other words, it is prescriptive rather than descriptive. The main body of economic theory confines itself to descriptive hypothesis, attempting to generalize about the relations among different variables without judgement about what is desirable or undesirable. For instance, the law of demand states that as price increases, demand goes down or vice-versa but this statement does not tell whether the outcome is good or bad. Managerial Economics, however, is concerned with what decisions ought to be made and hence involves value judgements. This has two aspects: first, it tells what aims and objectives a firm should pursue: and secondly, these having been defined, it tells how best to achieve these aims in particular situations. Managerial Economics, therefore, has also been described as 'normative micro-economics of the firm'.
- Fifthly, macro-economics is also useful to Managerial Economics since it provides an intelligent understanding of the environment in which the business must operate.

Q8. 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.

1.2 Relation with other Subjects

Q9. Explain the relationship of managerial economics with other disciplines.

(OR)

Explain how managerial economics has its roots in economics and management. Does it have any link with other subjects? Support your answer.

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

1. Managerial Economics and Traditional Economics

Managerial economics is essentially described as the economics applied in managerial decision-making. It is viewed as that branch of economics which bridges the gap between pure economic theory and managerial practice. Economics and managerial economics are concerned with the same kind of problems. They both deal with the problems of *scarcity* and *resource allocation.*

Since labor and capital resources in relation to a business firm are always limited, the best way to utilize these resources has to be found out inorder to achieve the stated organizational goals. Economics is mainly concerned with the study of types of markets, whereas managerial economics is concerned with the problems like the impact of markets and technological changes on the competitive position of the organization. Managerial economics generally gets solutions to the problems regarding the working of market mechanisms through the application of economic theory only. The major contributions of economics to managerial economics are,

(a) To understand the market conditions and the environment in which an organization works.

(b) To provide solutions to the problems of scarcity and resource allocation

A survey in U.K revealed that the following concepts of economics are utilized by managerial economics.

- Price and income elasticity of demand
- Opportunity cost
- The multiplier
- Propensity to consume
- Marginal revenue product
- Speculative motive
- Production function
- Balanced growth and
- Liquidity preference.

2. Managerial Economics and Management Theory and Accounting

Management Theory and Accounting also have a great influence on managerial economics. Managerial economics utilizes the management theories like,

(i) Profit maximization theories or theory of firm.

(ii) Managerial theories of firm.

(a) Boumol's 'Sales Revenue Maximization' Model.

(b) Managerial Utility Models

- Berle-Means-Galbraith Model of'Corporate Power Structure'
- O.Williamson's Model of 'Managerial Discretion'

(c) Growth Maximization Models

- Boumol's Model of ' Growth Maximization'
- Marris Model of 'Managerial Enterprise'
- Penrose's Theory of Firm.

Accounting is concerned with recording financial transactions of an organization. Accounting provides the cost and revenue data that forms the basis for all the analysis and computations in managerial economics. In the true sense, accounting information is the main source of data required by managerial economics in decision-making.

3. Managerial Economics and Theory of Decision-making

Decision Theory mainly deals with the problems of selection of alternatives in decision-making under the uncertainty conditions. It facilitates the manager in taking quick decisions under the conditions of multiple goals. Thus, the theories of decision-making are practical in nature and are goal-oriented.

4. Managerial Economics and Mathematics

Mathematics provides various sets of tools which help in the derivation and exposition of economic analysis. Many important methodologies of managerial economics rely on mathematical models. The concepts of mathematics that are used by managerial economics are Geometry, Matrices, Calculus, Algebra, Logarithm Exponential, Vectors, Determinants, Input-Output Tables etc.

5. Managerial Economics and Statistics

Statistical tools and techniques are of great help in business decision-making. Managerial economics mainly aims at estimating the future course of action on the basis of proper analysis of past and present data. Managerial economics uses the statistical tools like-Theory of Probability, Forecasting Techniques, Data Analysis, Regression Analysis etc., for collecting the data, analyzing and processing it, testing its validity and applying it. Statistics helps in empirical testing of theory and make better decisions related to demand and cost functions, production, sales or distribution. The main aspect of statistics is that it deals with uncertainty conditions which a firm usually faces.

6. Managerial Economics and Operations Research

Managerial economics depends upon many models and tools of operations research and quantitative techniques for business decision-making. Managerial economics aims at problems of decision-making whereas, operations research aims at solving managerial problems. Managerial economics utilizes the tools of operations research like-Model Building, Linear Programming Models, Inventory Models, Game Theory, Optimization Techniques, Transportation, Queuing Theory, Replacement Models etc. H.M. Wagner says that operations research is a scientific approach to problems solving for executive management.

7. Managerial Economics and Computer Science

Development of technology improved the use of computers in business undertakings. Today computers are used for maintaining data and accounts, inventory control, demand and supply predictions etc. Computerization of various business activities has limited their execution time and work load on managerial personnel. So, it is quite essential for a manager to be well acquainted with computers.

8. Managerial Economics and Psychology

Psychology is the basis upon which managerial economics is built. Psychology helps in understanding the behavioral implications, attitudes and motivations of macroeconomic variables such as consumers, suppliers, investors, worker or an employee which are very vital in managerial economics.

9. Managerial Economics and Organizational Behavior

Organizational behavior facilitates a manager to study and develop the behavioral models of the firm by integrating the managers behavior with that of the owner. It .further analyses .the economic rationality of the firm in a goal-oriented way.

1.3 FUNDAMENTALS CONCEPTS OF MANAGERIAL ECONOMICS

Q10. What are the various fundamental concepts in business economics?

(OR)

Discuss the basic economic tools in managerial economics.

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

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 organizations 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.

1.3.1 Concept of Opportunity Cost

Q11. Define opportunity cost? Explain the importance of opportunity cost.

Ans : **(Aug.-21, Nov.-20, Aug.-18, June-18, Jan.-18, Aug.-17, Feb.-17)**

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

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.

Q12. Explain briefly about incremental principle concept.

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

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 maximization 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, utilized 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 unutilized 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 generalize on the use of incremental principle, since the observed behaviour is variable.

1.3.2 Time Perspective

Q13. Define time perspective

Ans : **(Aug.-21, Nov.-20, Feb.-17)**

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.

1.3.3 Discounting Principle

Q14. What do you understand by discounting principle.

Ans : **(Aug.-21, Nov.-20, June-18, Feb.-17)**

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.

1.3.4 Equi-Marginal Principle

Q15. Explain briefly about equi-marginal principle.

Ans : **(June-18)**

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.

First, the values of marginal products are net of incremental costs. In activity B we may add one

unit of labour with an increase in physical output of 100 units. Each unit is worth 50 paise so that the 100 units will sell for Rs. 50. But the increased output consumes raw materials, fuel and other inputs so that variable costs in activity B (not counting the labour cost) are higher. Let us say that the incremental costs are Rs. 30 leaving a net addition of Rs. 20. The value of the marginal product relevant for our purpose is thus Rs. 20.

Secondly, if the revenues resulting from the addition of labour 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.

Thirdly, 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.

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

For managerial use further illustrates the application of Equi-marginal Principle:

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 $M\pi$ = 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, equi-marginalism will be replaced by the concept of equi-incrementalism.

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.

1.4 Decision Making Process

Q16. What do you mean by Decision Making. Explain the scope of Decision Making.

Ans :

Decision making is the main objective of Managerial Economics. Decision making may be defined as the process of selecting the suitable action from among several alternative courses of action. The problem of decision making arises whenever a number of alternatives are available.

Scope

1. Resource Allocation

Resources always are the top concern for managers. It is often that most of them feel that their team has too little manpower to complete the task at hand. It is also one of the principles that allow the best use of the resources to complete the task.

2. Inventory

Inventory allocation is another one of the major challenges. But, they must be on top of these aspects by analyzing the demand and supply models. Managers can get a better hold of management and transport of inventories by queuing products.

3. Pricing

Fixing prices for the products in any firm is a crucial part of the decision making process. Pricing problems involve decisions about various methods of pricing that firms need to adopt.

4. Investment

Managers must be aware of the future of their firms. In this manner, they can have oversight of falling prey to negative market forces. Thus, investment planning is of the pillars.

Q17. Describe the Process of Decision Making.

(OR)

Explain how managerial economics helps in decision making.

Ans : **(Nov.-21, Aug.-18)**

Decision making is crucial for running a business enterprise which faces a large number of problems requiring decisions.

Which product to be produced, what price to be charged, what quantity of the product to be produced, what and how much advertisement expenditure to be made to promote the sales, how much investment expenditure to be incurred are some of the problems which require decisions to be made by managers.

The five steps involved in managerial decision making process are explained below:

1. Establishing the Objective

The first step in the decision making process is to establish the objective of the business enterprise. The important objective of a private business enterprise is to maximize profits. However, a business firm may have some other objectives such as maximization of sales or growth of the firm.

But the objective of a public enterprise is normally not of maximization of profits but to follow benefit-cost criterion. According to this criterion, a public enterprise should evaluate all social costs and benefits when making a decision whether to build an airport, a power plant, a steel plant, etc.

2. Defining the Problem

The second step in decision making process is one of defining or identifying the problem. Defining the nature of the problem is important because decision making is after all meant for solution of the problem. For instance, a cotton textile firm may find that its profits are declining.

It needs to be investigated what are the causes of the problem of decreasing profits. Whether it is the wrong pricing policy, bad labour-management relations or the use of outdated technology which is causing the problem of declining profits. Once the source or reason for falling profits has been found, the problem has been identified and defined.

3. Identifying Possible Alternative Solutions (i.e. Alternative Courses of Action)

Once the problem has been identified, the next step is to find out alternative solutions to the problem. This will require considering the variables that have an impact on the problem. In this way, relationship among the variables and with the problems has to be established.

In regard to this, various hypotheses can be developed which will become alternative courses for the solution of the problem. For example, in case of the problem mentioned above, if it is identified that the problem of declining profits is due to be use of technologically inefficient and outdated machinery in production.

The two possible solutions of the problem are:

(i) Updating and replacing only the old machinery.

(ii) Building entirely a new plant equipped with latest machinery.

The choice between these alternative courses of action depends on which will bring about larger increase in profits.

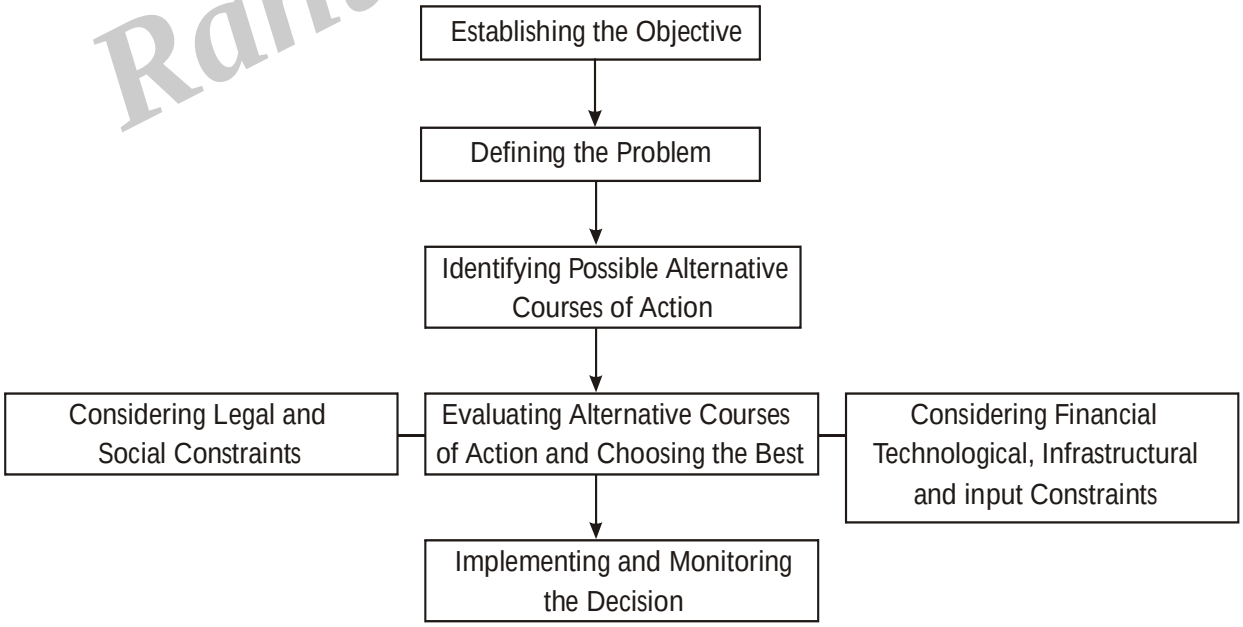


Fig. : Process of Decision Making

4. Evaluating Alternative Courses of Action

The next step in business decision making is to evaluate the alternative courses of action. This requires, the collection and analysis of the relevant data. Some data will be available within the various departments of the firm itself, the other may be obtained from the industry and government.

The data and information so obtained can be used to evaluate the outcome or results expected from each possible course of action. Methods such as regression analysis, differential calculus, linear programming, cost- benefit analysis are used to arrive at the optimal course. The optimum solution will be one that helps to achieve the established objective of the firm. The course of action which is optimum will be actually chosen. It may be further noted that for the choice of an optimal solution to the problem, a manager works under certain constraints.

The constraints may be legal such as laws regarding pollution and disposal of harmful wastes; they way be financial (i.e. limited financial resources); they may relate to the availability of physical infrastructure and raw materials, and they may be technological in nature which set limits to the possible output to be produced per unit of time. The crucial role of a business manager is to determine optimal course of action and he has to make a decision under these constraints.

5. Implementing the Decision

After the alternative courses of action have been evaluated and optimal course of action selected, the final step is to implement the decision. The implementation of the decision requires constant monitoring so that expected results from the optimal course of action are obtained. Thus, if it is found that expected results are not forthcoming due to the wrong implementation of the decision, then corrective measures should be taken.

1.5 Decision Making under Certainty, Uncertainty and Risk

Q18. Explain briefly about :

(i) Decision Making under Certainty

(ii) Decision Making under Uncertainty

(ii) Decision Making under Risk

Ans :

(i) Decision Making under Certainty

A condition of certainty exists when the decision-maker knows with reasonable certainty what the alternatives are, what conditions are associated with each alternative, and the outcome of each alternative. Under conditions of certainty, accurate, measurable, and reliable information on which to base decisions is available.

The cause and effect relationships are known and the future is highly predictable under conditions of certainty. Such conditions exist in case of routine and repetitive decisions concerning the day-to-day operations of the business.

(ii) Decision Making under Uncertainty

Most significant decisions made in today's complex environment are formulated under a state of uncertainty. Conditions of uncertainty exist when the future environment is unpredictable and everything is in a state of flux. The decision-maker is not aware of all available alternatives, the risks associated with each, and the consequences of each alternative or their probabilities.

The manager does not possess complete information about the alternatives and whatever information is available, may not be completely reliable. In the face of such uncertainty, managers need to make certain assumptions about the situation in order to provide a reasonable framework for decision-making. They have to depend upon their judgment and experience for making decisions.

(iii) Decision Making under Risk

When a manager lacks perfect information or whenever an information asymmetry exists, risk arises. Under a state of risk, the decision maker has incomplete information about available alternatives but has a good idea of the probability of outcomes for each alternative.

While making decisions under a state of risk, managers must determine the probability associated with each alternative on the basis of the available information and his experience.

1.6 Role and Functions of Managerial Economist

Q19. Describe the role and functions of managerial economist in business firm.

Ans :

A managerial economist can play a very important role by assisting the management in using the increasingly specialized skills and sophisticated techniques, required to solve the difficult problems of successful decision-making and forward planning. In business concerns, the importance of the managerial economist is therefore recognized a lot today. In advanced countries, large companies employ one or more economists. A managerial economist can contribute to decision-making in business in specific terms. Different roles of managerial economist in business as follows:

- The outlook for the national economy, the most important local, regional or worldwide economic trends, the nature of phase of the business cycle that lies immediately ahead.
- Population shifts and the resultant ups and downs in regional purchasing power.
- The demand prospects in new as well as established markets. Impact of changes in social behavior and fashions, i.e., whether they will tend to expand or limit the sales of a company's products, or possibly make the products obsolete?
- The areas in which the market and customer opportunities are likely to expand or contract most rapidly.
- Whether overseas markets expand or contract and the affect of new foreign government legislation's on the operation of the overseas plants?
- Whether the availability and cost of credit tend to increase or decrease buying, and whether money or credit conditions ahead are likely to easy or tight?
- The prices of raw materials and finished products.
- Whether the competition will increase or decrease.
- The main components of the five-year plan, the areas where outlays have been increased and the segments, which have suffered a cut in their outlays.
- The outlook to government's economic policies and regulations and changes in defense expenditure, tax rates tariffs and import restrictions.
- Whether the Reserve Bank's decisions will stimulate or depress industrial production and consumer spending and how will these decisions affect the company's cost, credit, sales and profits.

Business Operations

A managerial economist can also be helpful to the management in making decisions relating to the internal operations of a firm in respect of such problems as price, rate of operations, investment, expansion or contraction. Certain relevant questions in this context would be as follows:

- What will be a reasonable sales and profit budget for the next year?
- What will be the most appropriate production schedules and inventory policies for the next six months?
- What changes in wage and price policies should be made now?
- How much cash will be available next month and how should it be invested?

Specific Functions

The managerial economists can play a further role, which can cover the following specific functions as revealed by a survey pertaining to Britain conducted by K.J.W. Alexander and Alexander G. Kemp:

- Sales forecasting.
- Industrial market research.
- Economic analysis of competing companies.
- Pricing problems of industry.
- Capital projects.
- Production programmes.
- Security / Investment analysis and forecasts.
- Advice on trade and public relations.
- Advice on primary commodities.
- Advice on foreign exchange.
- Economic analysis of agriculture.
- Analysis of underdeveloped economics.
- Environmental forecasting.

1.7 USE OF ECONOMETRIC MODELS

Q20. Briefly explain about Econometric Models.

Ans : **(Aug.-21, Nov.-20)**

Econometrics has come to occupy an important role as an aid to management. Econometrics is a combination of economic theory, statistical analysis and mathematical tools with a view to analyze and explain economic relationships. Undoubtedly, econometric methodology is a significant tool available to a managerial economist.

Broadly speaking, an econometric model may be defined as a mathematical description of some economic entity. The primary aim of such models generally is to predict the future behaviour of the economic variables encompassed by the model. Econometric models may vary in their level of sophistication from the simple to extremely complex ones. Obviously, simpler the model, easier it is to build and understand, but it is likely to yield less information and hence its predictive value is smaller.

I) Single Equation Model

1. Linear Equation

The simplest form of an econometric model is the single-equation model. This type is frequently employed in empirical demand analysis. For example, in developing a model to forecast the demand for cigarettes, it might be hypothesized that the quantity of cigarettes demanded (Q_c) is a function of price (P), per capita disposable income (Y), size of the population over age 18 (N), and advertising expenditure (A). If it is assumed that the relationships are linear, an equation may be written as:

$$Q_C = B_0 + B_1P + B_2 Y + B_3N + B_4A + e$$

Where B_0, B_1, B_2, B_3, and B_4 are the parameters to be estimated. Parameter B_1 is hypothesized to be negative, and B_2, B_3 and B_4 to be positive. The last term, e, is referred to as error term and implies that the expression is not likely to fully explain all of the variation in demand. The most common technique of parameter estimation is least squares regression analysis using either time-series (historical) data or cross-sectional data.

2. Multiplicative Equation

An alternative to linear equation can be the multiplicative equation. Here the relationship is in terms of a multiplicative or exponential form such as:

$$Q = a P^b A^c Y^d e$$

Where Q is the quantity demanded of a commodity (also referred to as the dependent variable), P is price, A is advertising expenditure and Y is real disposable income per head. The term 'e' is the error term.

We can convert the above equation into a linear form by taking logarithm of both-sides of the expression, such as

$$\text{Log } Q = \text{Log } a + b \log P + c \log A + d \log Y + \log e$$

An attractive feature of this form is that the exponents (for example, b, c, d) represent elasticity values: the estimated value for b represents price elasticity of demand whereas c and d represent

advertising elasticity and income elasticity of demand respectively. One can thus conveniently read off elasticity values directly.

The last term, e, is the error term and means that the expression above is unlikely to explain fully all of the variation in demand. In other words, the term e captures the effect on demand (or sales) of all the determinants which are not specifically included in the relationship.

3. Distributed Lag Models

In some econometric estimation of demand function, distributed lag models have been used./For instance,

$$Q = \int \{(P_t, P_{t-1}, P_{t-2})(Y_t, Y_{t-1}, Y_{t+1})(Q_{t-1}, Q_{t-2})\}$$

Where P_t = Actual present price of that commodity

P_{t-1} = Observed past price of that commodity

P_{t+1} = Expected future price of that commodity

Y_t = Current income

Y_{t-1} = Past income (generating savings)

Y_{t+1} = Future income (expected capacity to pay back)

Q_{t-1} = Quantity purchased earlier in t-1

Q_{t-2} = Quantity purchased earlier in 1-2

[Note that if t = 2000, t-1 = 1999, t-2 = 1998 and t+1 = 2001]

In case, the commodity is a consumer durable like a TV set, then Q_{t-1} and Q_{t-2} may be interpreted as past purchases towards building up 'Stock' adjustment. In case the commodity is a consumer non-durable like cigarettes, Q_{t-1} and Q_{t-2} are to be interpreted as past purchases towards HABIT FORMATION. Either way, the current purchase Q_t is influenced by past purchases.

II) Multiple Equation Model

Although in many cases, business problems can be adequately analyzed with the help of single equation models, in many other instances, it becomes necessary to use multiple equation models because inter-relationships involved are quite complex.

Multiple equation econometric models comprise two types of equation:

1. Definitional equations, also known as identities; and
2. Behavioural or Structural equations.

Definitional equations or identities express relationships which hold true by definition. For example, the statement that profits (π) are equal to total revenue (TR) minus total cost (TC) is an example of an identity:

$$\pi = TR - TC$$

A behavioural equation explains the relationship between a particular endogenous variable and other variables on the system. The term behavioural stems from the fact that these equations specify how economic groups such as consumers and producers behave. The behavioural equations are those which contain unknown parameters.

The best way to illustrate the use of a multiple equation model is to take and examine a simple three-equation model of the national ecomony. The three equations are:

$GNP_t = C_t + I_t + G_t$ ... (1)

$C = a_1 + b_1 + u_1$ ... (2)

$I = a_2 + b_2 P_{t-1} + u_2$ ... (3)

where, GNP = Gross national product

C = Consumption expenditure

I = Investment

G = Government expenditure for goods and services

P = Profits

a,b = Parameters of the equation

u = Disturbance terms

Here the subscript t means period t.

Hence, t–1 = Lagged one time period.

Equation (1) is an identity or a definitional equation. Equations (2) and (3) are behavioural or structural equations. Equation (1). an identity, defines gross national product as equal to the sum of consumption expenditure, investment and government expenditure. Equation (2) hypothesizes that current period consumption is a function of the current level of gross national product. Equation (3) tells that current investment depends upon profits in the previous period.

The u is included in Equations (2) and (3) to recognize the fact that the theoretical relationships are not exact. These variables, called 'disturbance terms' represent the fact that the other explicit independent variables in the equations do not account completely for the variations in the dependent variables. For example, in equation (2), connsumption in the current period is, in reality, determined by other factors in addition to gross national product in the current period. These 'other factors' may be economic or psychological: also, there may be errors in the data used to represent the relevant variables. Assuming that no significant independent variables have been left out, the disturbance terms may be viewed as reflecting all the unknown and unpredictable factors. Ideally, the variations in these "all other" factors will be small and random in nature, and will tend to cancel out each other, so that their total net effect on the dependent variable is nil. Insofar as the above assumptions hold true in practice, the remaining explicit variables in the equation will account for the 'causal movements' in the dependent variable.

The construction and use of an econometric model can be said to consist of four steps.

1. Specification of model

The first step is to specify a model, for example, GNP = C + I + G in our model. This means expressing an economic theory in mathematical terms, or, in other words, expressing the hypothesized economic relationship in the form of an equation.

2. Estimating parameters

This means determining the unknown parameters; for example, a, b in our model. The most frequently used technique for parameter estimation is the method of least squares regression analysis with either historical or cross-sectional data. The knowledge of data and their sources is also necessary.

3. Choosing values for exogenous variables

The forecaster has to assume values for the exogenous variables to get forecasts of the endogenous variables. P. in our model, is an exogenous variable which has to be assumed.

4. Prediction

This means projecting the economy's behaviour into the future and making a forecast.

Q21. Describe the importance of Econometric Models in taking managerial decisions.

(OR)

Explain the use of Econometric models in decision making.

(OR)

Discuss the use of Econometric models in decision making.

Ans : **(Aug.-21, Nov.-20, Jan.-18)**

1. It formulates mathematical/statistical models which are useful to represent real world economic systems.
2. It helps to analyze complex market trends to analyze the variables resulting in growth or shrinkage of demand for a product or service.
3. It is used to interpret the economic forces that affect supply and costs within an industry or firm.
4. It helps to understand external forces which forms the basis for strategy development and business planning.
5. Economic indicators such as GDP, inflation rate, personal income data, unemployment rate etc, obtained from these models acts as tools in decision-making process.
6. It is helpful for business strategists in making decisions like increasing purchasing orders, issuing layoffs or increasing/ decreasing production etc.
7. These models provide qualitative and quantitative insight which is not possible to get from other methods.
8. It yields a set of predicted numbers which are powerful asset in decision making process.
9. It increases the confidence level of user by providing alternative assumptions about assumed values for autonomous variables.

Short Question and Answers

1. Explain the features of Robbins definition of economics.

Ans :

In his landmark essay on the nature of economics, Lionel Robbins defined economics as

"The science which studies human behaviour as a relationship between ends and scarce means which have alternative uses"

The features of Robbin's definition are:

1. Human wants are unlimited

The scarcity definition of Economics states that human wants are unlimited. If one want is satisfied, another want crops up. Thus, different wants appear one after another.

2. Limited means to satisfy human wants

Though wants are unlimited, yet the means for satisfying these wants are limited as the resources required to meet these wants are limited in number.

3. Efficient use of scarce resources

Wants are unlimited and are to be considered in order of importance. On the basis of such importance, scarce resources are to be used in an efficient method for the satisfaction of these wants.

4. Need for choice and optimization

Wants are to be categorized as the most essential and the least essential wants. Economics is also called a science of choice. Hence, scarce resources are to be used for the maximum satisfaction of the essential human wants.

2. Define opportunity cost? Explain the importance of 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.

3. What do you understand by 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.

4. Define Managerial Economics.

Ans :

Managerial economics is a discipline which deals with the application of economic theory to business management. It deals with the use of economic concepts and principles of business decision making.

Formerly it was known as "Business Economics" but the term has now been discarded in favour of Managerial Economics. Managerial Economics is often called as Business Economics or Economic for Firms.

Meaning

Managerial economics is a branch of economics that applies microeconomic analysis to decision methods of businesses or other management units.

Definitions

Managerial economics has been defined by different scholars as follows.

1. **According to Spencer and Siegelman** "Managerial economics is the integration of economic theory with business practice for the purpose of facilitating decision-making and forward planning by management"
2. **According to Mc Nair and Meriam** "Managerial economics is the use of economic models of thought to analyze business situations"
3. **According to Brigham and Pappas** "Managerial economics is the application of economic theory and methodology to business administration practice"

Managerial economics by nature is a specialized discipline of management studies that deals with the application of economic theory, tools and methodologies to business management practice.

Management economics has evolved as an integration of economic theory and decision sciences with business management.

5. Explain briefly about incremental principle concept.

Ans :

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 maximization 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.

6. Time perspective

Ans :

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.

7. Explain the characteristics of managerial economics.

Ans :

It be useful to point out certain chief characteristics of Managerial Economics, inasmuch as they throw further light on the nature of the subject-matter and help in a clearer understanding thereof.

- First, Managerial Economics is micro-economic in character. This is because the unit of study is a firm; it is the problems of a business firm which are studied in it. Managerial Economics does not deal with the entire economy as a unit of study.
- Secondly, Managerial Economics largely uses that body of economic concepts and principles which is known as Theory of the Firm' or 'Economics of the Firm'. In addition, it also seeks to apply Profit Theory which forms part of Distribution Theories in Economics.
- Thirdly, Managerial Economics is pragmatic. It avoids difficult abstract issues of economic theory but involves complications ignored in economic theory to face the overall situation in which decisions are made. Economic theory appropriately ignores the variety of

backgrounds and training found in individual firms but Managerial Economics considers the particular environment of decision-making.

- Fourthly, Managerial Economics belongs to normative economics rather than positive economics (also sometimes known as descriptive economics). In other words, it is prescriptive rather than descriptive. The main body of economic theory confines itself to descriptive hypothesis, attempting to generalize about the relations among different variables without judgement about what is desirable or undesirable. For instance, the law of demand states that as price increases, demand goes down or vice-versa but this statement does not tell whether the outcome is good or bad. Managerial Economics, however, is concerned with what decisions ought to be made and hence involves value judgements. This has two aspects: first, it tells what aims and objectives a firm should pursue: and secondly, these having been defined, it tells how best to achieve these aims in particular situations. Managerial Economics, therefore, has also been described as 'normative micro-economics of the firm'.
- Fifthly, macro-economics is also useful to Managerial Economics since it provides an intelligent understanding of the environment in which the business must operate.

8. Decision Making.

Ans :

Decision making is the main objective of Managerial Economics. Decision making may be defined as the process of selecting the suitable action from among several alternative courses of action. The problem of decision making arises whenever a number of alternatives are available.

9. Different roles of managerial economist.

Ans :

- The outlook for the national economy, the most important local, regional or worldwide economic trends, the nature of phase of the business cycle that lies immediately ahead.
- Population shifts and the resultant ups and downs in regional purchasing power.
- The demand prospects in new as well as established markets. Impact of changes in social behavior and fashions, i.e., whether they will tend to expand or limit the sales of a company's products, or possibly make the products obsolete?
- The areas in which the market and customer opportunities are likely to expand or contract most rapidly.
- Whether overseas markets expand or contract and the affect of new foreign government legislation's on the operation of the overseas plants?
- Whether the availability and cost of credit tend to increase or decrease buying, and whether money or credit conditions ahead are likely to easy or tight?
- The prices of raw materials and finished products.
- Whether the competition will increase or decrease.
- The main components of the five-year plan, the areas where outlays have been increased and the segments, which have suffered a cut in their outlays.

10. Discuss the use of Econometric models in decision making.

Ans :

1. It formulates mathematical/statistical models which are useful to represent real world economic systems.

2. It helps to analyze complex market trends to analyze the variables resulting in growth or shrinkage of demand for a product or service.

3. It is used to interpret the economic forces that affect supply and costs within an industry or firm.

11. Equi-marginal principle.

Ans :

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".

Choose the Correct Answers

1. The statements that contain the word 'ought to' are called [b]
   (a) Prescriptive (b) Normative
   (c) Assertive (d) Negative
2. Managerial economics is close to [a]
   (a) Micro economics (b) Macro economics
   (c) Theory of Income and Employment (d) Theory of Wages and Employment
3. Integration of economic theory with business practice is called [a]
   (a) Managerial economics (b) Economics
   (c) Macro economics (d) Micro economics
4. "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
5. 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
6. 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
7. Economic goods are scarce resources because they [a]
   (a) Are limited in supply to satisfy society requirements
   (b) Are limited to man made goods
   (c) Cannot be increased in terms of supply
   (d) Are important to satisfy human needs
8. Other things remaining the same, which of the following is correct ? [b]
   (a) marginal utility derived on the consumption of every additional unit goes on increasing.
   (b) Marginal utility derived on the consumption of every additional unit goes on diminishing.
   (c) Marginal utility derived on the consumption of every additional unit goes on changing either upwards or donwards.
   (d) Marginal utility derived on the consumption of every additional unit never changes.

9. What is the position of budget line with respect to indifference curve? [c]

(a) Below (b) Above

(c) Tangential (d) Intersecting

10. Consumption of additional apples after reaching the saturation point leads to [c]

(a) Fall in total utility and increase in marginal utility

(b) Increase in total utility and marginal utility

(c) Fall in total utility leading marginal utility to become negative

(d) Total utility to become negative and marginal utility tending to fall

Fill in the blanks

1. _____ is the application of economic theory and quantitative methods.
2. "Micro Economics" and "Macro Economics" were coined by _____.
3. _____ deals with economic affairs in the large.
4. Economists make a wide use of the _____.
5. The _____ lies at the centre of the cardinal approach.
6. The term _____ refers to the capacity of a commodity to satisfy a human want.
7. _____ implies comparison and ranking without quantification of the magnitude.
8. The idea of equi-marginal principle was first mentioned by _____.
9. An _____ is the locus of points representing all the different combinations of two goods.
10. Micro Economics is also known as _____.

ANSWERS

1. Managerial economics
2. Prof. Ragnar Frisch
3. Macro economics
4. Incremental principle
5. Law of diminishing marginal utility
6. "Utility"
7. Ordinal measurement
8. H. Gossen
9. Indifference curve
10. Price Theory

UNIT II

Theory of Utility & Demand utility, Marginal Utility, Law of Marginal Utility, Demand concepts, determinants of demand, Law of Demand, Elasticity of demand, Types of Elasticity, Measurement of Elasticity (Numerics), Demand Estimation for Firm & Industry, Demand Forecasting Methods.

2.1 Theory of Utility

2.1.1 Marginal Utility

Q1. Define the following terms :

(i) Utility

(ii) Total Utility

(iii) Marginal Utility

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

(i) Utility

Utility is a psychological feeling of satisfaction and is subjective. It means that the same thing may yield different amount of utility to different persons. The amount of utility a person derives from a commodity depends on his desire for it. If the intensity is great, then he derives large amount of utility. On the other hand, if the intensity is less then he derives small amount of utility.

(ii) Total Utility

Total utility refers to complete satisfaction acquired by a consumer after consuming the various units of the commodity. Total utility increases with consumption of more units but to some extent. Consumer may reach the point of saturation when he attains maximum total utility but if he continues consumption of commodity then his total utility began to fall.

(iii) Marginal Utility

The concept of marginal utility is equally important for utility analysis. Marginal utility is defined as the utility derived from the marginal or additional unit of a commodity consumed by an individual. It can also be defined as the addition to the total utility of a commodity resulting from the consumption of an additional unit. Therefore, marginal utility, MU of a commodity X, is the change in the total utility, ΔTU, attained from the consumption of an additional unit of commodity X. Mathematically, it can be expressed as:

$$MU_x = \frac{\Delta TUx}{\Delta Qx}$$

Where TU_x = Total utility, ΔQ_x = Change in quantity consumed by one additional unit

When total number of unit consumed is n, marginal utility can also be expressed as:

MU of nth unit = $TU_n - TU_{n-1}$

2.1.2 Law of Marginal Utility

Q2. Critically examine the law of diminishing marginal utility.

(OR)

Explain in detail the law of diminishing marginal utility.

Ans : **(Nov.-21, Nov.-20, Aug.-18, Aug.-17)**

The law of diminishing marginal utility was first propounded by 19th century German economist H.H. Gossen which explains the behavior of the consumers and the basic tendency of human nature. Hence, this law is also known as Gossen's First Law. This was further modified by Marshall.

(i) According to Marshall - The additional benefit a person derives from a given increase of his stock of anything diminishes with the growth of the stock that he already has.

(ii) According to Paul A. Samuelson - As the amount consumed of a good increases, the marginal utility of the good leads to decrease.

As per the definitions, we can conclude that, if the consumer consumes goods continuously, the utility obtained from every successive unit goes on diminishing. If the consumer is consuming the goods continuously, firstly he reaches the point of maximum satisfaction which is known as level of satiety. If he continues to consume the goods again, the utility obtained from that particular goods goes in negative aspect or he gets inutility.

Assumptions

1. The consumer who is consuming the goods should be logical and knowledgeable to consume every unit of goods.
2. The goods which are to be consumed should be equal in size and shape.
3. Consumer should consume the goods without time gap.
4. The consumer's income, preference, taste and fashion should not be changed while consuming the goods.
5. To hold the law good, utility should be measured in countable units or cardinal numbers. The utility obtained from those goods is measured in 'utils' unit.
6. As we know that money is the measuring rod of utility, being so, marginal utility of money should remain constant during consumption of the goods.

The law mainly explains the relation between the quantity of the good consumed and the utility or satisfaction obtained by its consumption. It states that if a consumer goes on purchasing additional units of a commodity, after some consecutive consumptions the utility of that commodity declines. Let us consider an example of adding more oranges to the purchasing cart and observing the related changes in Total Utility (TU) and Marginal Utility (MU).

Quantity of Oranges (in units)	Total Utility (TU)	Marginal Utility (MU)
0	0	0
1	2	2
2	5	3
3	8	3
4	10	2
5	13	3
6	13	0
7	10	–3
8	8	–2

In the above table, total utility increases upto 6th orange and then goes on diminishing with every additional orange. At the same 6th orange, marginal utility becomes zero and then becomes negative. Zero marginal utility indicates maximum satisfaction and the additional commodity makes marginal utility negative indicating dissatisfaction. Diagrammatically, the law of diminishing marginal utility is represented as follows,

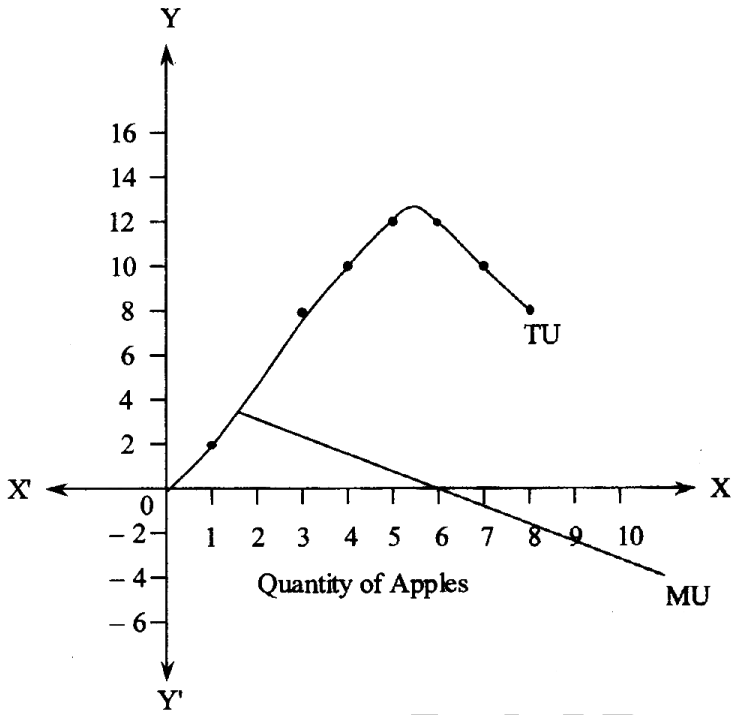


Fig. : Law of Diminishing Marginal Utility

Importance

The law has greater significance in economics. It forms basis for many laws of consumption. The following points identify its importance.

(i) The law facilitates the finance minister in designing an appropriate taxation policy by forming a base for progressive taxation technique.

(ii) The law explains divergence between value-in-use and value-in-exchange and becomes a basis for the theory of value.

(iii) The law explains the negative sloping of the demand curve and forms a foundation for the law of demand.

(iv) The law determines the optimum consumption level where a consumer attains high satisfaction from his expenditure.

(v) It leads to social justice by facilitating a socialist in equitable distribution of wealth.

Q3. Explain the law of Equi-Marginal Utility.

Ans :

It states that a consumer will distribute his income between different goods in such a way that the utility derived from each good is equal. Marshall states the law as. "If a person has a thing which can be put to several uses, he will distribute it among the uses in such a way that it has the same marginal utility in all". According to this law,

$$\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$$

Where,

MU_X – Marginal utility of good A

P_X – Price of good X

MU_Y – Marginal utility of good Y

P_Y – Price of good Y.

i.e., a consumer is in equilibrium when marginal utility of money spent on each good is equal.

Assumptions

Various assumptions underlying the law are as follows:

1. Consumer has a fixed income and spends all of it.
2. Marginal utility of money is constant.
3. Consumer is assumed to be rational and he tries to maximize his satisfaction.
4. Prices of the commodities are assumed to be constant.
5. Wants and habits of the consumer are remain constant.

Explanation

Let us consider an example of marginal utilities of consumer A who consumer units of bread and butter within his limited salary of ? 15. Below is a table indicating the marginal utilities obtained by consumer A.

No. of Units	Marginal Utility of Bread	Marginal Utility of Butter
1	50	45
2	42	38
3	38	30
4	30	20

From the above table, we can interpret the following,

1. Consumer *A* first purchases a bread as it provides higher marginal utility (50).
2. His second purchase will be butter as it has marginal utility (45) greater than second unit of bread.
3. So the consumer purchases the units of bread and butter in his limited income such that he can get higher satisfaction.

2.2 Demand Concepts

Q4. Define demand. What are the objectives of demand?

Ans : **(Aug.-21, Jan.-19, Jan.-18)**

Introduction

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.

Q5. Explain the features of demand.

Ans :

The various features of demand are:

(a) Difference between Desire and Demand

Demand is the amount of commodity for which a consumer has the willingness and the ability to buy .These is difference between need and demand .Demand is not only the need, it also implies that the consumer has the money to purchase it.

(b) Relationship between Demand and price

Demand is always at a price .unless price is stated, the amount demanded has no meaning. The consumer must know both the price and the commodity and he will tell his amount demanded.

(c) Demanded at a point of time

The amount demanded must refer to some period of time such as 10 quintals of wheat per year or six shirts per year of five kilos of sugar per month .not only this, the amount demanded and the price must refer to a particular data.

Q6. What is demand function? How do you determine it.

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

Demand function is a function which describes a relationship between one variable and its determinants, it describes how much quantity of goods is bought at alternative prices of good and related goods, alternative income levels, and alternative values of other variables affecting demand. Thus, the demand function for a good relates the quantity of a good which consumers demand during a given period to the factors which influence the demand. The above factors can be built up into a demand function.

Mathematically, the demand function for a product A can be expressed as follows:

$Qd = f(P, I, T, P_R, E_P, E_I, S_P, D_c, A, O)$

Where

Qd refers to quantity of demand and it is a function of the following variables:

- P → refers to price of the product;
- I → refers to Income level of the consumer;
- T → refers to tastes and preferences of the consumer;
- P_R → refers to prices of related goods (substitutes/complementary);
- E_P → refers to expectations about the prices in future;
- E_1 → refers to expectations about the incomes in future,
- S_P → refers to size of population;
- D_c → refers to distribution of consumers over different regions;
- A → refers to advertising efforts and
- O → refers to any other factors capable of affecting the demand.

The impact of some of these determinants on demand can be described as follows:

(a) Price of the product

Demand for a product is inversely related to its price. In other words, if price rises, the demand falls and vice versa. This is the price demand function showing the price effect on demand.

(b) Income of the consumer

As the income of the consumer or the household increases, there is tendency to buy more and more upto a particular limit. The demand for product X is directly related to the income of the consumer.

(c) Prices of substitutes or complementaries

The demand for product X is determined by the prices of its related products: substitutes or complementaries. If there is an increase in the price of a substitute, the demand for product X will go up and vice versa. Similarly, if the price of complementary goods (to product X) goes up, the demand for product X will fall.

(d) Tastes and preferences

If the tastes and preferences of the consumers change, then there is change in the product demanded also. Most of the companies keep changing their products and services, as and when the customer's tastes and preferences change. In some cases, the companies take advantage of technological changes and upgrade their products and services. Such changes in the technology can be advantageously used to meet the specific requirements of the customers. Thus, they try to change the tastes and preferences of the consumers through public awareness campaigns, advertisements in the media.

2.2.1 Determinants of Demand

Q7. What are the Factors influencing Demand?

(OR)

Explain the factors determining demand?

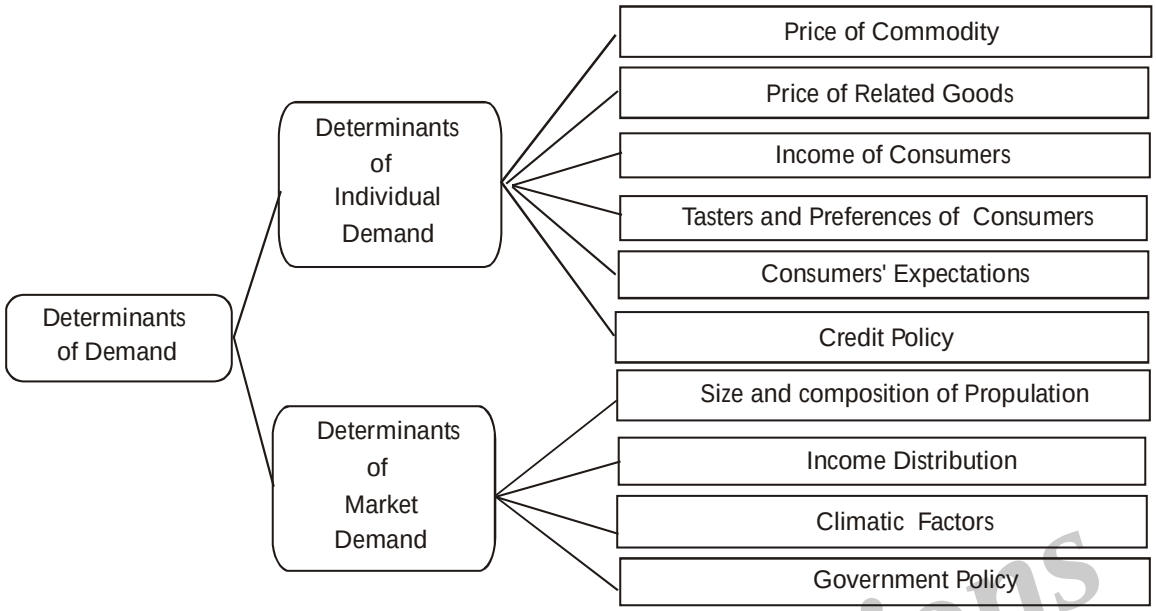
(OR)

Explain the determinants of demand.

Ans : **(Aug.-21, June-18, Jan.-18)**

I. Factors Influencing Individual Demand

When an individual intends to purchase a particular product, he/she may take into consideration various factors, such as the price of the product, the price of substitutes, level of income, tastes and preferences, and the features of the product. These considerations determine the individual demand of the product. Let us now discuss the factors that influence individual demand as follows:



1. Price of a commodity

The price of a commodity or service is generally inversely proportional to the quantity demanded while other factors are constant. This implies that when the price of the commodity or service rises, its demand falls and vice versa.

2. Price of related goods

The demand for a good or service not only depends on its own price but also on the price of related goods. Two items are said to be related to each other if the change in price of one item affects the demand for the other item. Related goods can be categorized as follows:

- **Substitute or competitive goods**

  These goods can be used interchangeably as they serve the same purpose; thus, are the competitors of each other. For example, tea and coffee, cold drink and juice, etc. The demand for a good or service is directly proportional to the price of its substitute. Consider the two brands of biscuits; Britannia's Good Day and Sunfeast's Cookies. If the price of Good Day increases, consumers will tend to switch to Sunfeast's Cookies. Therefore, the demand for Sunfeast's Cookies is influenced by the rise in the price of Britannia's Good Day. Therefore, these are substitutes or competitors of each other. Complementary goods: Complementary goods are used jointly; for example, car and petrol. There is an inverse relationship between the demand and price of complementary goods. This implies that an increase in the price of one good will result in fall in the demand of the other good. For example, an increase in the price of mobile phones not only would lead to fall in the quantity demanded but also lower the demand for mobile cover or scratch guards. The use of SIM cards might confuse students as even if the new mobile is purchased the old SIM card can be inserted and that does not lead to any change in demand.

- **Complementary goods**

  Complementary goods are used jointly; for example, car and petrol. There is an inverse relationship between the demand and price of complementary goods. This implies that an increase in the price of one good will result in fall in the demand of the other good. For example, an increase in the price of mobile phones not only would lead to fall in the quantity

demanded but also lower the demand for mobile cover or scratch guards. The use of SIM cards might confuse students as even if the new mobile is purchased the old SIM card can be inserted and that does not lead to any change in demand.

- **Income of consumers**

The level of income of individuals determinestheir purchasing power. Generally, income and demand are directly proportional to each other. This implies that rise in the consumers' income results in rise in the demand for a commodity.

Let us discuss different types of commodities in detail.

- **Normal goods**

These are goods whose demand rises with an increase in the level of income of consumers. For example, the demand for clothes, furniture, cars, mobiles, etc. rises with an increase in individuals' income.

- **Inferior goods**

These are goods whose demand falls with an increase in consumers' income. For example, the demand for cheaper grains, such as maize and barley, falls when individuals' income increases as they prefer to purchase higher quality grains.These goods are known as Giffen goods in economic parlance.

- **Inexpensive goods or necessities of life**

These are basic necessities in an individual's life, such as salt, matchbox, soap, and detergent. The demand for inexpensive goods rises with increase in consumers' income until a certain level after that it becomes constant.

3. Tastes and preferences of consumers

The demand for a commodity changes with changes in the tastes and preferences of consumers (which depend on customers' customs, traditions, beliefs, habits, and lifestyles). For example, the demand for burqas is high in gulf countries. In such countries, there may be less or no demand for short skirts.

4. Consumers' expectations

Demand for commodities also depends on the consumers' expectations regarding the future price of a commodity, availability of the commodity, changes in income, etc. Such expectations usually cause rise in demand for a product. For example, if a consumer expects a rise in the price of a commodity in the future, he/she may purchase larger quantities of the commodity in order to stock it. Similarly, if a consumer expects a rise in his/her income, he/she may purchase a commodity that was relatively unaffordable earlier.

5. Credit policy

It refers to terms and conditions for supplying various commodities on credit. The credit policy of suppliers or banks also affects the demand for a commodity. This is because favourable credit policies generally result in the purchase of commodities that consumers may not have purchased otherwise. Favourable credit policies generally increase the demand for expensive durable goods such as cars and houses. For example, easy home and car loans offered by banks have led to a steep rise in the demand for homes and cars respectively.

II. Factors Influencing Market Demand

Market demand is the sum total of all household (individual) demands. Therefore, all the factors that affect the individual demand also affect the market demand as well. However, there are certain other factors that affect the market demand, which are as follows:

1. Size and composition of population

Population size refers to the actual number of individuals in a population. An increase in the size of a population increases the demand for commodities as the number of consumers would increase. Population composition refers to the structure of the population based on characteristics, such as age, sex, and race. The composition of a population affects the demand for commodities as different individuals would have different demands. For example, a population with more youngsters will have higher demand for commodities like t-shirts, jeans, guitars, bikes, etc. compared to the population with more elderly people.

2. Income distribution

Income distribution shows how the national income is divided among groups of individuals, households, social classes, or factors of production. Unequal distribution of income results in differences in the income status of different individuals in a nation. Rich people would have higher purchasing power resulting in a higher demand for commodities required by rich classes. For example, luxury goods will have higher demand. On the other hand, nations having evenly distributed income would have higher demand for essential goods.

3. Climatic factors

The demand for commodities depends on the climatic conditions of a region such as cold, hot, humid, and dry. For example, the demand for air coolers and air conditioners is higher during summer while the demand for umbrellas tends to rise during monsoon.

4. Government policy

This includes the actions taken by the government to determine the fiscal policy and monetary policy such as taxation levels, budgets, money supply, and interest rates. Government policies have direct impact on the demand for various commodities. For example, if the government imposes high taxes (sales tax, VAT, etc.) on commodities, their prices would increase, which would lead to a fall in their demand. On the contrary, if the government invests in building of roads, bridges, schools, and hospitals, the demand for bricks, cement, labour, etc., would rise.

Q8. Explain different types demand.

Ans :

Demand is generally classified based on various factors, such as the number of consumers for a given product, the nature of products, utility of products, and interdependence of different demands. The demand for a particular product can be different under different situations.

Let us discuss these different types of demand in detail:

1. Price demand

It is a demand for different quantities of a commodity or service that consumers intend to purchase at a given price and time period assuming other factors, such as prices of the related goods, level of income of consumers, and consumer preferences, remain unchanged. Price demand is inversely proportional to the price of a commodity or service. As the price of a commodity or service rises, its demand falls and vice versa. Therefore, price demand indicates the functional relationship between the price of a commodity or service and the quantity demanded. It can be mathematically expressed as follows:

$D_A = f(P_A)$ where,

D_A = Demand for commodity A

f = Function

P_A = Price of commodity A

2. Income demand

It is a demand for different quantities of a commodity or service that consumers intend to purchase at different levels of income

assuming other factors remain the same. Generally, the demand for a commodity or service increases with increase in the level of income of individuals except for inferior goods. Therefore, demand and income are directly proportional to normal goods whereas the demand and income are inversely proportional to inferior goods. The relationship between demand and income can be mathematically expressed as follows:

$D_A = f(Y_A)$, where,

D_A = Demand for commodity A

f = Function

Y_A = Income of consumer A

3. Cross demand

It refers to the demand for different quantities of a commodity or service whose demand depends not only on its own price but also the price of other related commodities or services. For example, tea and coffee are considered to be the substitutes of each other. Thus, when the price of coffee increases, people switch to tea. Consequently, the demand for tea increases. Thus, it can be said that tea and coffee have cross demand. Mathematically, this can be expressed as follows:

$D_A = f(P_B)$, where,

D_A = Demand for commodity A

f = Function

P_B = Price of commodity B

4. Individual demand and market demand

This is the classification of demand based on the number of consumers in the market. In dividual demand refers to the quantity of a commodity or service demanded by an individual consumer at a given price at a given time period.

For example, the quantity of sugar that an individual or household purchases in a month is the individual or household demand. The individual demand of a product is influenced by the price of a product, income of customers, and their tastes and preferences. On the other hand, market demand is the aggregate of individual demands of all the consumers of a product over a period of time at a specific price while other factors are constant. For example, there are four consumers of sugar (having a certain price). These four consumers consume 30 kilograms, 40 kilograms, 50 kilograms, and 60 kilograms of sugar respectively in a month. Thus, the market demand for sugar is 180 kilograms in a month.

5. Joint demand

It is the quantity demanded for two or more commodities or services that are used jointly and are, thus demanded together. For example, car and petrol, bread and butter, pen and refill, etc. are commodities that are used jointly and are demanded together. The demand for such commodities changes proportionately. For example, rise in the demand for cars results in a proportionate rise in the demand for petrol. However, in the case of joint demand, rise in the price of one commodity results in the fall of demand for the other commodity. In the above example, an increase in the price of cars will cause a fall in the demand of not only of cars but also of petrol.

6. Composite demand

It is the demand for commodities or services that have multiple uses. For example, the demand for steel is a result of its use for various purposes like making utensils, car bodies, pipes, cans, etc. In the case of a commodity or service having composite demand, a change in price results in a large change in the demand. This is because the demand for the commodity or service would change across its various usages. In the above example, if the price of steel increases, the

price of other products made of steel also increases. In such a case, people may restrict their consumption of products made of steel.

7. Direct and derived demand

Direct demand is the demand for commodities or services meant for final consumption. This demand arises out of the natural desire of an individual to consume a particular product. For example, the demand for food, shelter, clothes, and vehicles is direct demand as it arises out of the biological, physical, and other personal needs of consumers. On the other hand, derived demand refers to the demand for a product that arises due to the demand for other products.

For example, the demand for cotton to produce cotton fabrics is derived demand. Derived demand is applicable for manufacturers' goods, such as raw materials, intermediate goods, or machines and equipment. Apart from this, the factors of production (land, labour, capital, and enterprise) also have a derived demand. For example, the demand for labour in the construction of buildings is a derived demand. The demand for the product is inelastic in the international market, the seller country will have an upper hand in exports.

Q9. Define demand curve. What are the characteristics of demand curve?

Ans :

Meaning

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.

Q10. 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.

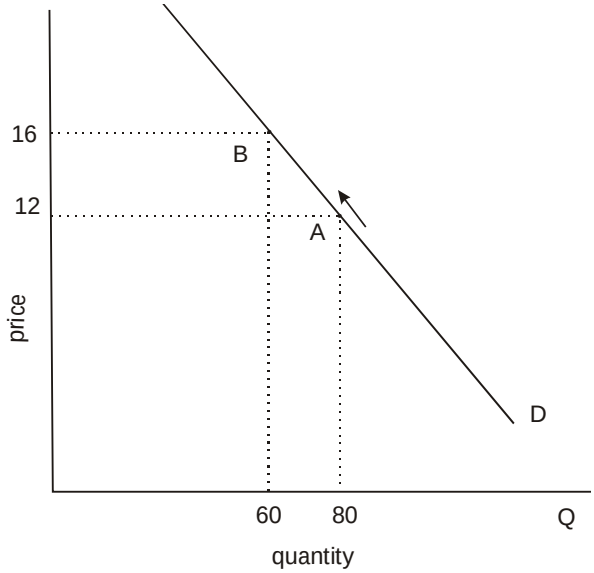
Q11. Explain the shifts in demand and movements along a demand curve.

Ans :

A shift in demand means at the same price, consumers wish to buy more. A movement along the demand curve occurs following a change in price.

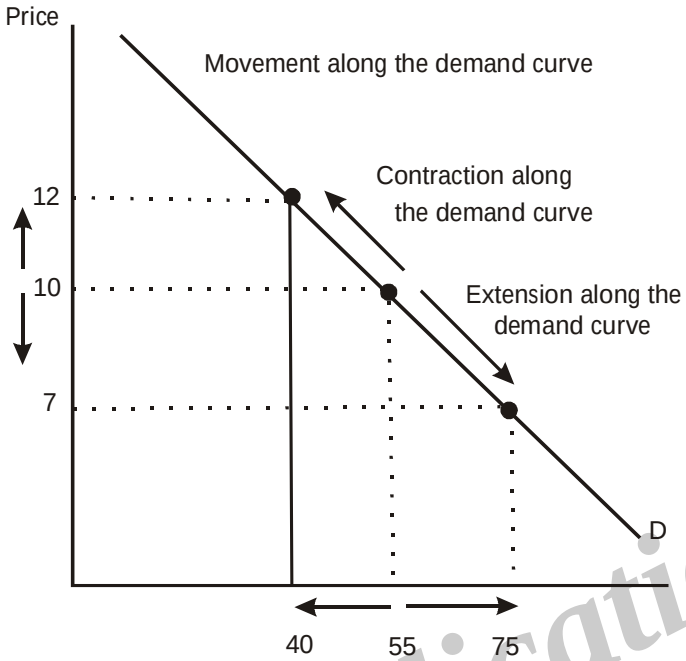
Movement along the demand curve

A change in price causes a movement along the demand curve. It can either be contraction (less demand) or expansion/extension. (more demand)



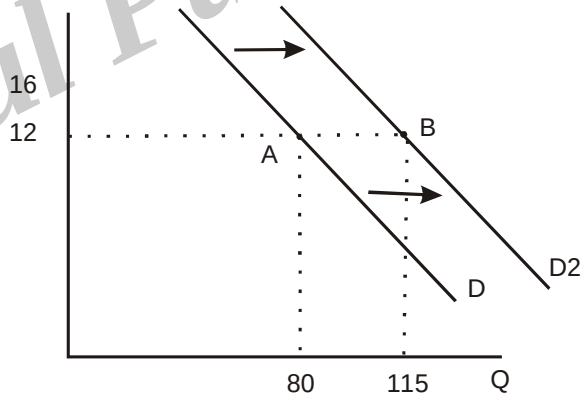
Contraction in demand. An increase in price from ` 12 to ` 16 causes a movement along the demand curve, and quantity demand falls from 80 to 60. We say this is a contraction in demand.

Expansion in demand. A fall in price from ` 16 to ` 12 leads to an expansion (increase) in demand. As price falls, there is a movement along the demand curve and more is bought.



A change in price doesn't shift the demand curve - we merely move from one point of the demand curve to another.

Shift in the Demand Curve



A shift in the demand curve occurs when the whole demand curve moves to the right or left. For example, an increase in income would mean people can afford to buy more widgets even at the same price.

The demand curve could shift to the right for the following reasons:

- The good became more popular (e.g. fashion changes or successful advertising campaign)
- The price of a substitute good increased.
- The price of a complement good decreased.
- A rise in incomes (assuming the good is a normal good, with positive)
- Seasonal factors.

Q12. What are the differences between movement and shift in demand curve.

Ans :

S.No.	Basis For Comparison	Movement in Demand Curve	Shift in Demand Curve
1.	**Meaning**	Movement in the demand demand curve is when the commodity experience change in both the quantity demanded and price, causing the curve to move in a specific direction.	The shift in the demand curve is when, the price of the commodity remains constant, but there is a change in quantity demanded due to some other factors, causing the the curve to shift to a particular side
2.	**Determinant**	Price	Non-price
3.	**Indicates**	Change in Quantity Demanded	Change in Demand
4.	**Result**	Demand Curve will move upward or downward.	Demand Curve will shift rightward or leftward.

2.3 LAW OF DEMAND

Q13. Define Law of Demand. State the assumptions of Law of Demand Curve.

Ans : **(Nov.-20, Jun-18)**

Meaning

The law of demand states a consumers behaviour, in demanding a commodity in relation to the variations in its prices. It expresses a functional relationship between two variables of demand relation i.e., the price and the quantity demanded of a commodity.

The law of demand states that other things remaining equal, the quantity demanded of a commodity increases when its price falls and decrease when its price rises.

Definitions

(i) According to Marshall, "The amount demanded increases with a fall in price and diminishes when price increases, other things being equal".

(ii) According to Robertson, "Other things being equal, the lower the price at which a thing is offered, the more a man will be prepared to buy it."

(iii) According to Ferguson, "Law of Demand, the quantity demanded varies inversely with price."

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.

Q14. What are the exceptions to the law of demand?

Ans : **(June-18)**

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 surplus 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.

Q15. Define Demand Schedule.

Ans :

A demand schedule is a tabular representation of different quantities of commodities that consumers are willing to purchase at specific price and time while other factors are constant. It can be classified into two categories, which are:

1. Individual demand schedule

It is a tabular representation of quantities of a commodity demanded by an individual at a particular price and time, provided all other factors remain constant.

2. Market demand schedule

There is more than one consumer of a commodity in the market. Each consumer has his/her own individual demand schedule. If the quantities of all individual demand schedules are consolidated, it is called market demand schedule.

2.4 Elasticity of Demand

Q16. What do you understand by elasticity of Demand?

(OR)

Define Elasticity of Demand.

Ans :

Meaning

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 neoclassical 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.

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 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 Building, "Price elasticity of demand measures the responsiveness of the quantity demanded to the change in price."

(iii) According to 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.

Q17. Distinguish between law of demand and elasticity of demand.

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

Basis of Difference	Law of Demand	Elasticity of Demand
Meaning	Law of Demand states the relationship between price of the commodity and its demand.	Elasticity of demand measures the extent to which quantity demanded of a commodity increases or decreases due to change in the price of good, income or price of related goods.
Nature	Law of demand is a qualitative statement which expresses the change in direction of demand due to change in price of goods.	Elasticity of demand is a quantitative change in demand due to price changes.
Positive (or) Negative	In general conditions, law of demand indicates the inverse relationship between price and demand.	Elasticity of demand may be positive or negative.
Types	There is no type of law of demand.	The elasticity of demand may be: Price elasticity of demand Income elasticity of demand Cross elasticity of demand
Degrees	There are no degrees of law of demand.	The elasticity of demand has five degrees: Infinite demand More than one elasticity Unitary elastic Less than one elasticity Zero or inelastic demand
Exceptions	The exceptions of law of demand are: Veblen Goods or Articles of Distinction Ignorance of consumers Giffen Goods etc.	There are no such exceptions of elasticity of demand.

2.4.1 Types of Elasticity of Demand

Q18. 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

2.4.1.1 Price Elasticity of Demand

Q19. What is price elasticity of demand ? Explain different types of price elasticity of Demand?

(OR)

Explain Price Elasticity of Demand.

Ans : **(Aug.-21, Nov.-20, June-18, Aug.-17, Feb.-17)**

The concept of price elasticity of demand was developed by Alfred Marshall. Price elasticity of demand is a technical term used by economist to explain the degree of responsiveness of the demand for a product to a change in its price.

"Price elasticity of demand is the responsiveness of quantity demanded of a commodity to a given change in price".

$$\text{Price elasticity of demand} = \frac{\text{Proportionate change in the quantity demanded for product A}}{\text{Proportionate change in the price of B}}$$

The same is expressed as,

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

Where,

Q_1 = Quantity demanded before price change

Q_2 = Quantity demanded after price change

P_1 = Price before change

P_2 = Price after change

E > 1 (Elastic Demand)	Percentage change in quantity demanded greater than percentage change in revenue price increase.
e = 1 (Unity Elasticity)	Percentage change in quantity demanded is equal to percentage change in price revenue remain unchanged.
s < 1 (Inelastic Demand)	Percentage change in quantity demanded is less than percentage change in price revenue decreased.

Table : Price Elasticity of Demand

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.

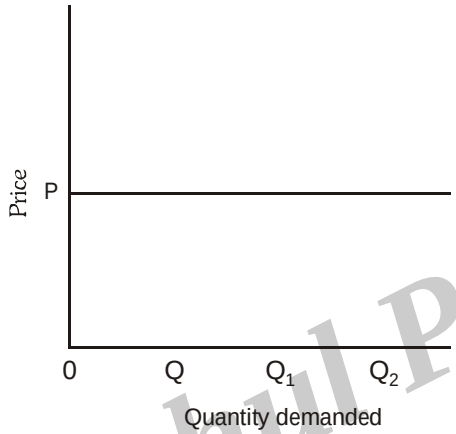


Fig. : Perfectly Elastic Demand

(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.

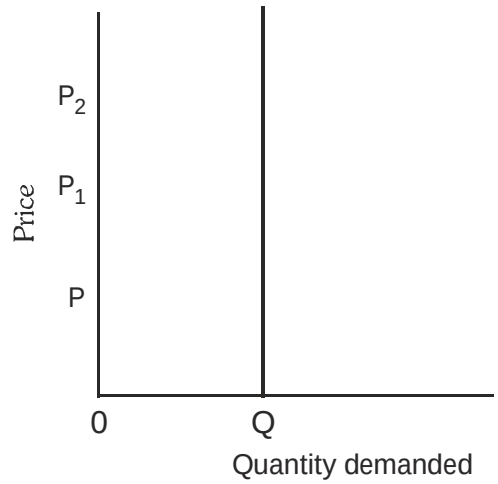


Figure : Perfectly Inelastic Demand

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.

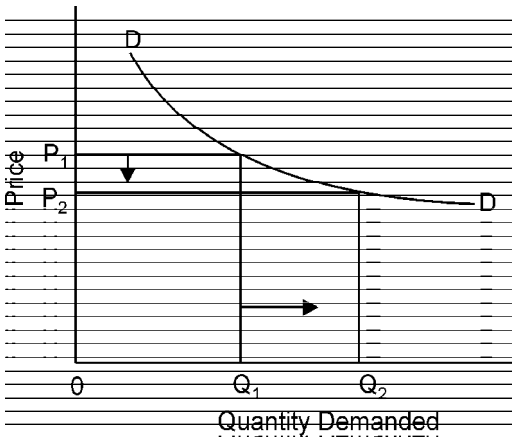


Figure : Relatively Elastic Demand

(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.

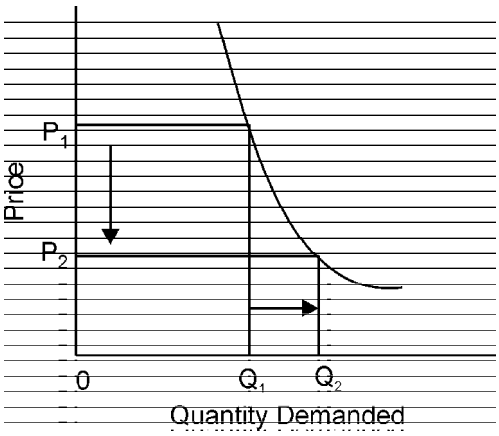


Fig. : Relatively Inelastic Demand

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.

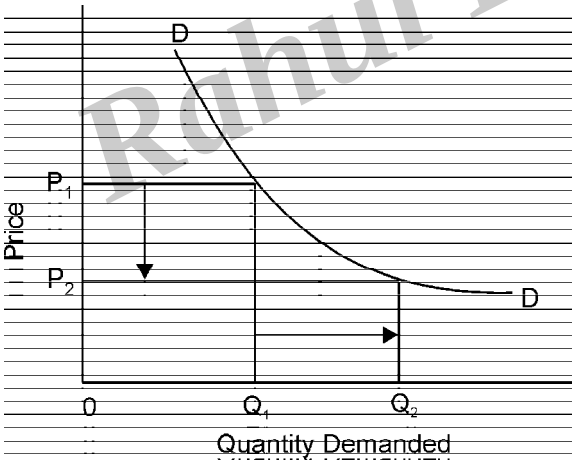


Fig. : Unity Elasticity

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.

Q20. Discuss the role of price elasticity of demand in managerial decision.

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

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.

Q21. What are the determinants of price Elasticity of Demand ?

(OR)

What are the factors affecting price Elasticity of Demand ?

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

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.

2.4.1.2 Income Elasticity of Demand

Q22. Define Income elasticity of demand.

(OR)

Explain Income Elasticity of Demand.

Ans : **(Aug.-21, Nov.-20)**

Meaning

The price, the income of consumers is also an important determinant of the demand for the product. An increase in the income of consumers increases the demand for the product even if the price remains constant. The responsiveness of quantity demanded with respect to the income of consumers is called the income elasticity of demand. The following are some important popular definitions of income elasticity of demand:

Definition

(i) According to Watson, "Income elasticity of demand means the ratio of the percentage change in the quantity demanded to the percentage in income."

(ii) According to Richard G. Lipsey, "The responsiveness of demand to change in income is termed as income elasticity of demand."

Mathematically, the income elasticity of demand can be stated as:

$$e_y = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

Where,

$$\text{Percentage change in quantity demanded} = \frac{\text{New quantity demanded - Original Quantity demanded } (\Delta Q)}{\text{Original quantity demanded } (Q)}$$

$$\text{Percentage change in income} = \frac{\text{New income -Original income } (\Delta Y)}{\text{Original income } (Y)}$$

Thus, the formula for calculating the price elasticity of demand is as follows:

$$e_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

Where

Q is original quantity demanded

Q_1 is new quantity demanded

$$\Delta Q = Q_1 - Q$$

Y is original income

Y_1 is new income

$$\Delta Y = Y_1 - Y$$

Q23. Discuss various types of income elasticities of demand?

Ans :

On the basis of numerical value, income elasticity of demand is classified into three groups, which are explained as follows:

1. Positive income elasticity of demand

When a proportionate change in the income of a consumer increases the demand for a product and vice versa, income elasticity of demand is said to be positive. In case of normal goods, the income elasticity of demand is generally found positive, which is shown in Fig.

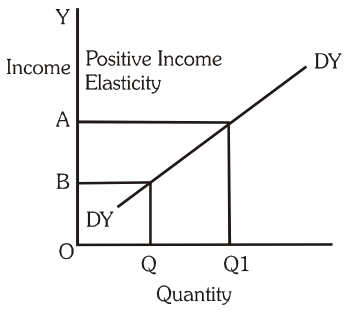


Fig. : Positive Income Elasticity of Demand

In Figure, DYDY is the curve representing positive income elasticity of demand. The curve is sloping upwards from left to the right, which shows an increase in demand (OQ to OQ_1) as a result of rise in income (OB to OA).

There are three types of positive income elasticity of demand, namely unitary income elasticity of demand, less than unitary income elasticity of demand, and more than income elasticity of demand. Let us discuss them as follows:

- **Unitary income elasticity of demand**

  The income elasticity of demand is said to be unitary when a proportionate change in a consumer's income results in an equal change in the demand (increase) for a product. For example, if there is 25% increase in the income of a consumer, the demand for milk consumption would also be increased by 25%. Thus $e_y = 25/25 = 1$.

- **Less than unitary income elasticity of demand**

  The income elasticity of demand is said to be less than unitary when a proportionate change in a consumer's income causes comparatively less increase in the demand for a product. For example, if there is an increase of 25% in consumer's income, the demand for milk is increased by only 10%. Thus $e_y = 10/100 = 0.1 < 1$

- **More than unitary income elasticity of demand**

  The income elasticity of demand is said to be more than unitary when a proportionate change in a consumer's income causes a comparatively large increase in the demand for a product. For example, if there is an increase of 25% in consumer's income, the demand for milk is increased by only 35%. Thus $e_y = 35/25 = 1.4 > 1$.

2. Negative income elasticity of demand

When a proportionate change in the income of a consumer results in a fall in the demand for a product and vice versa, the income elasticity of demand is said to be positive. It generally happens in case of inferior goods. For example, consumers may prefer small cars with a limited income. However, with a rise in income, they may prefer using luxury cars.

Figure shows the negative income elasticity of demand :

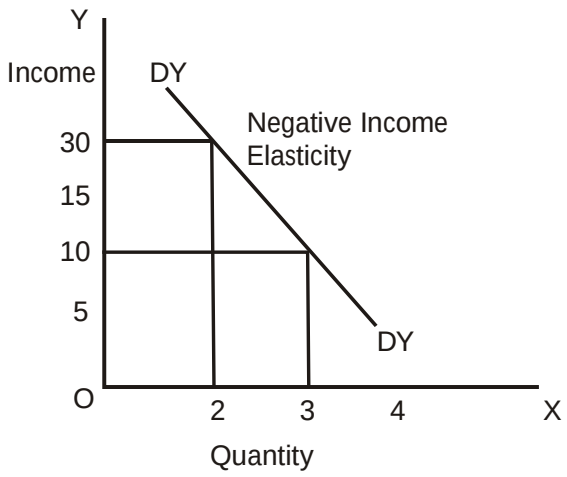


Fig. : Negative Income Elasticity of Demand

In Figure, DYDY is the curve representing negative income elasticity of demand. The curve is sloping downwards from left to the right, which shows a decrease in the demand as a result of a rise in income. As shown in Figure, with a rise of income from 10 to 30, the demand falls from 3 to 2.

3. Zero income elasticity of demand

When a proportionate change in the income of a consumer does not bring any change in the demand for a product, income elasticity of demand is said to be zero. It generally occurs for utility goods such as salt, kerosene, electricity.

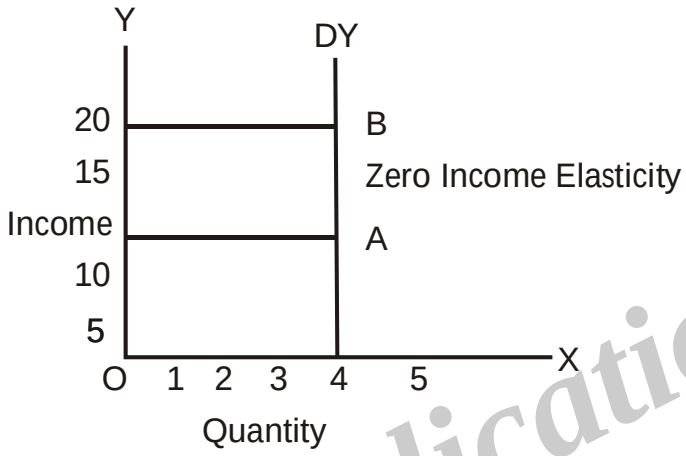


Fig.: Zero Income Elasticity

In Figure, DYDY is the curve representing zero income elasticity of demand. The curve is parallel to Y-axis that shows no change in the demand as a result of a rise in income. As shown in Figure, with a rise of income from 10 to 20, the demand remains the same i.e. 4.

2.4.1.3 Cross Elasticity of Demand

Q24. Explain briefly about cross elasticity of demand.

(OR)

What is Cross Elasticity of Demand?

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

The change (increase or decrease) in the demand for one good in response to the change (increase or decrease) in price of the related good is called the cross elasticity of demand. Cross elasticity is always negative for complementary demand.

Example

Due to increase in price of sugar, the demand for tea and coffee is decreases.

Cross elasticity is positive for substitutes.

The demand for jeans goes up if there is an increase in the price of formal parts.

$$\text{Cross elasticity of demand} = \frac{\text{Proportionate change in quantity demanded for product B}}{\text{Proportionate change in price of product A}}$$

The same is expressed as,

$$Edc = \frac{\frac{(Q_2 - Q_1)}{Q_1}}{\frac{(P_2A - P_1A)}{P_1A}}$$

Where,

Q_1 = Quantity demanded before change.

Q_2 = Quantity demanded after change.

P_2 = Price before change.

P_2 = Price after change in the case of product.

Q25. What are the differences between income elasticity of demand and cross elasticity of demand ?

Ans :

S.No.	Income Elasticity of Demand	Cross Elasticity of Demand
(1)	When the demand for a product undergoes changes i.e., increase or decrease due to change in income is called income elasticity of demand.	The change i.e., increase or decrease in the demand for one good in response to change i.e., increase or decrease in price of the related goods is called to cross elasticity of demand.
(2)	The income elasticity of demand measures the changes in the quantity of demand.	The cross elasticity of demand measures how much demand of one good may change when price of another goods hold constant.
(3)	Income elasticity is calculated as, $= \frac{\text{Proportionate change in quantity}}{\text{Proportionate change in income}}$	Cross elasticity of demand is calculated as, $= \frac{\text{Proportionate change in quantity}}{\text{Proportionate change in price}}$
(4)	If the income elasticity of a good is positive we call them normal goods. It can be between '0' and '1', we call it income inelastic demand for goods such goods are clothing and news paper. If it is above '1', we call it income elastic demand.	If the cross elasticity is negative, then we can call, such goods as complements. Such as, popcorn and soft drinks they are consume together.
(5)	If the income elasticity is negative, it means that the income increases, the quantity demanded for these goods as inferior goods. **Example** : Magi Noodles, Rice, Potatos etc.	If the price elasticity is positive, than we call such goods as substitutes. Ex : Pizza and burger, usually we can consume any one.

Q26. What are the differences between Price and income elasticity of demand ?

Ans :

S.No.	Price Elasticity of Demand	Income Elasticity of Demand
(1)	Price elasticity of demand is the responsiveness of quantity demanded of a commodity to a given change in price. come elasticity of demand.	When the demand for a product undergo changes i.e., increase or decrease due to change in income is called in-
(2)	It mainly depends upon the price of the product.	It mainly depend upon the consumers income.
(3)	It is measured when price of a commodity changes.	The income elasticity of demand is measured with the changes in the quantity of demand.
(4)	Price elasticity of demand is calculated as $= \frac{\text{Proportionate change in quantity}}{\text{Proportionate change in price}}$	Income elasticity of demand is calculated as $= \frac{\text{Proportionate change in quantity}}{\text{Proportionate change in income}}$
(5)	In this type, when any product price the demand of a quantity increases and if the product price increases then the demand of quantity decreases.	In this type any change product de-decreases then mand increases than the consumer income get change i.e., decreases and if the product demand decreases than the consumer income is change i.e., remain unuse or constant.

Q27. What are the differences between Price and Cross Elasticity of Demand ?

Ans :

S.No.	Price Elasticity of Demand	Cross Elasticity of Demand
(1)	Price elasticity of demand is the responsiveness of quantity demanded of a commodity to a given change in price.	The changes i.e., increase or decrease in the demand for one good in response to change i.e., increase or decrease in price of the related goods is called cross elasticity of demand.
(2)	It is used to calculate the proportionate change which results in price and quantity relation.	It is used to calculate the proportionate change in quantity and price relation.
(3)	Price elasticity of demand is calculated as, $= \frac{\text{Proportionate change in quantity of Product A}}{\text{Proportionate change in price of Product B}}$	'Cross elasticity of demand is calculated as, $= \frac{\text{Proportionate change in quantity of Product B}}{\text{Proportionate change in price of Product A}}$
(4)	Price elasticity of demand is basically based on price of a product.	Cross elasticity of demand is basically relay on variation in price of related goods.
(5)	The price elasticity of demand measures the price of a commodity is the rate at which quantity are bought to changes as the prices changes.	The cross elasticity of demand measures the rate of responsiveness of quantity demanded of one commodity due to change in price of another commodity.

2.5 Measurement of Elasticity

Q28. Explain briefly about Measurement of Elasticity of Demand.

(OR)

What are the methods of measuring Elasticity of Demand.

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

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

AQ = 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 analyze to estimated greater than 1, equal to 1, less than –1 elasticities of demand is being determined it can illustrated here under schedule.

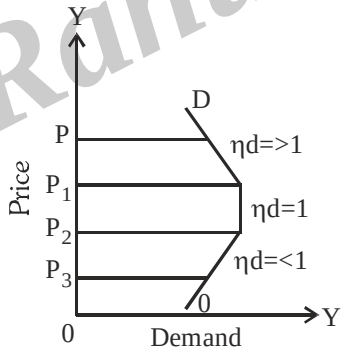
Schedule

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 equivalent 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 equivalent to price elasticity of demand.

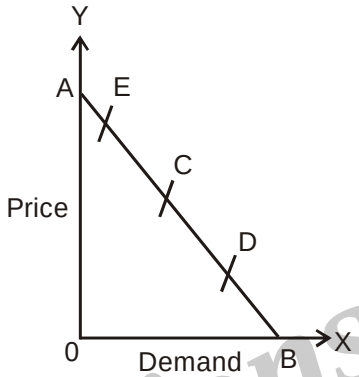
If the price is at rupees 6/- the purchased units. So units in order to incurred the total expenditure is 1080 is the price is comedown at Rs. 5/- the purchased units are raised 200 units in order to incurred. The total expenditure. Therefore it is equivalent less than/price elasticity of demand. Based 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

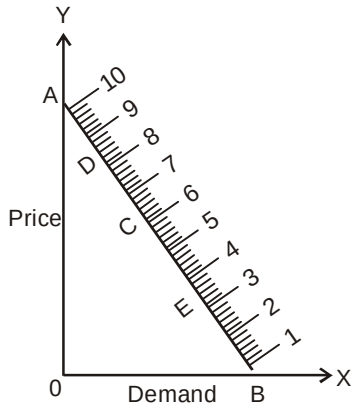
Based on this method on any point of the demand line we can traceout the nature of elasticity of demand it, can illustrated here under example :



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 traceout 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.



The point method of elasticity of demand the following formula.

(Lower segment of a point)

Point method of $\eta d = \frac{L}{U}$ (Upper segment of a point)

Based on above formula (or) equation, for

Example :

At the point of C yd = $\frac{L}{U} = \frac{CB}{CA} = \frac{5}{5} = 1$, so it equal to = 1 ηd

At the point of D ηd = $\frac{L}{U} = \frac{DB}{DA} = \frac{75}{75} = 3$, so it equal to = Z1 ηd

At the point of C ηd = $\frac{L}{U} = \frac{EB}{EA} = \frac{2.5}{7.5} = \frac{1}{3}$ = 0.33, so it equal to ηd

At the point of A ηd = $\frac{L}{U} = \frac{AB}{A} = \frac{10}{0} = a$ = 0.33, so it equal to ηd

At the point of B ηd = $\frac{L}{U} = \frac{B}{BA} = \frac{0}{10} = a$ = 0.33, so it equal to ηd = 0

3. Arc Method

Marshall gave a clear formulation of price elasticity as the ratio of a relative change in quantity to a relative change in price. Lets stand for price elasticity. Then

$$e_P = \frac{\text{Relative Change in Quantity}}{\text{Relative change in price}}$$

$$= \frac{\text{Proportionatechange in Quantity}}{\text{Proportionatechange in price}}$$

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

Here Q is the quantity, P is the price and Δ (delta) is the symbol meaning "a change in". Thus, $\frac{\Delta Q}{Q}$ is relative change in quantity, and $\frac{\Delta P}{P}$ is a relative change in price.

Equivalently, elasticity is the percentage change in quantity divided by percentage change in price.

$$e_P = \frac{\% \text{ change in quantity}}{\% \text{ change in price}}$$

If percentage changes are known, the numerical value of e_P can be calculated. Suppose the percentage change in quantity is 3 and in price

1. If price falls percentage change in price is minus 1. Then

$$e_P = \frac{3\%}{-1\%} = -3$$

If price goes up, the change is quantity is minus 3 per cent. Thus e_P always becomes negative. It is common practice to ignore negative sign.

e_P is also called the coefficient of elasticity of demand. On the basis of numerical value of e_P we can classify price elasticity into five types.

(i) Perfectly elastic demand

If a change in price causes an infinitely large change in quantity. ΔQ in the fraction is infinitely large. The coefficient is infinity. When the coefficient E is infinity, demand is side to be perfectly elastic or infinitely elastic. In such cases, a small rise in price reduces the demands to zero. A small fall in price increases demand infinitely. For example, the demand for paddy sold by single farmer is perfectly elastic at the ruling market price. This means that the farmer can sell all his output at that price without causing the price to change. He could sell nothing at all at any higher price.

(ii) Perfectly inelastic demand

If E is zero, demand is said to be perfectly inelastic. A zero coefficient means that a change in price is accompanied by no change in the quantity bought. Hence ΔQ is zero, making E zero. The demand curve will be a vertical straight line parallel to Y-axis.

The above two are the extreme opposite and limiting cases.

(iii) Unitary elastic demand

If E is 1, demand is said to be unitary elastic. The demand is neither elastic nor inelastic. Unit elasticity of demand is the dividing line between elastic demand and inelastic demand. In the case, the percentage change in quantity is equal to percentage change in price. Then E = 1. The demand curve will be rectangular hyperbola.

(iv) Elastic demand

If the coefficient E is greater than 1, and less than infinite, demand is said to be elastic.

(v) Inelastic demand

If E is less than 1, but more than zero, demand is inelastic. Elasticity can thus vary between zero and infinity.

Q29. Explain the Significance of Price Elasticity of demand.

Ans :

1. Price determination

The concept of price elasticity of demand is used by organizations in determining prices under various situations. For instance, under monopolistic market conditions, an organization sets a low price per unit of the product in case of elastic demand. As a result, the demand for the product rises. On the other hand, when the demand for the product is inelastic, the price is set very high. This helps in generating large revenues for organizations due to the high price of a product while demand remains constant.

2. Price discrimination

This is another area where price elasticity of demand plays an important role. Price discrimination refers to charging different prices from various customers for the same product. The common example of price variation is petrol. Its demand is inelastic as the change in the price does not affect the consumption. Thus, the price of petrol is charged differently in different states of India.

3. Formulation of taxation policies

Government takes under consideration the price elasticity of demand before formulating taxation policies. Generally, government levies high taxes on products (for producers) whose demand is elastic. On the contrary, it levies

high taxes on products (for customers) having inelastic demand as the consumption remains unaffected.

4. International trade

The concept of price elasticity has a significant role in international trade. This is because successful trade transactions between two countries are dependent on the price elasticity of demand. This is because price elasticity of demand is used in deciding the level of imports and exports. For instance, if the demand for the product is inelastic in the international market, the seller country will have an upper hand in exports.

5. Formulation of agricultural policies

The price elasticity of demand also helps the government in formulating agricultural policies by providing insight into the paradox of poverty. The prices of farm products whose demand is inelastic fall due to large supplies as a result of bumper crops. This results in a fall in prices, which leads to low income for farmers. Consequently, poverty among farmers increases. Thus, government sets a minimum suitable price for inelastic farm products so that farmers can generate adequate revenues.

Q30. Explain the Importance of Income Elasticity of demand.

Ans :

1. Income of consumers in a country

In any country, the income level of consumers is not the same. Therefore, consumers spend on the basis of not only on their need but also their purchasing capacity. The purchasing capacity of consumers increases with a rise in their income. For example, a consumer with a low income may prefer using public transport for commuting. However, with a rise in income, he/she may buy a two wheeler for the same purpose.

2. Nature of products

The nature of products being consumed by consumers also has an important influence on income elasticity.

For example, basic goods used on a day to day basis, such as salt, sugar, and cooking oil, is elastic. Even with a rise in the income of a consumer, the demand for such products does not change and remain inelastic.

3. Consumption pattern

With a rise in income, people quickly change their consumption patterns. For example, people may start buying high priced products with an increase in their income. This leads to an increase in the demand for the products in the market. However, once the consumption pattern is established, it becomes difficult to lower the demand in case of decrease in income. For example, a consumer may buy a two wheeler that runs on petrol as a result of rise in his/her income. However, over a period of time, in case his/her income falls, it will be difficult for him to reduce the consumption of petrol.

PROBLEMS

1. Suppose that the demand curve for video rentals has been estimated to be Q = 2500

– 250P. Further your average costs of supplying videos is equal to 2 AC = 8 – 006 Q + 00000Q . Calculate your optimal price, quantity and profits.

Sol :

Calculation of Optimal Price and Quantity

Given,

$Q = 2500 - 250\ P$

Dividing the equation with 250

$$\frac{Q}{250} = \frac{2500}{250} = \frac{250P}{250}$$

$0.004\ Q = 10 - P$

$P = 10 - 0.004Q$

$TR = PQ = (10 - 0.004\ Q)\ Q$

$= (10Q - 0.004Q)\ Q$

$= 10 - 0.004\ Q^2$

$$MR = \frac{d}{dQ}(PQ)$$

$$= 10 - (0.004 \times 2)\,Q$$

$$= 10 - 0.008\,Q$$

Calculation of Total Cost (TC)

Multiplying average cost (AC) with quantity (Q)

$$AC = 8 - 0.006Q + 0.000002Q$$

$$= 8 - 0.006002Q$$

$$TC = 8Q - 0.006002Q \times Q$$

$$= 8Q - 0.006002Q^2$$

Applying $\frac{d}{dx}\left(x^n\right) = n.x^{n-1}$ to get MC

$$MC = 8 - (0.006002 \times 2)Q$$

$$MC = 8 - 0.012\,Q$$

Now, setting (Marginal Revenue) MR = MC (Marginal Cost)

$$MR = MC$$

$$10 - 0.008\,Q = 8 - 0.012Q + 0.008Q$$

$$10 = 8 - 0.012Q + 0.008Q$$

$$10 = 8 - 0.004Q$$

$$10 - 8 = -0.004Q$$

$$2 = -0.004Q$$

$$\frac{2}{-0.004} = Q$$

$$Q = -500$$

Substituting 'Q' value in equation P = 10 – 0.004Q

$$P = 10 - 0.004\,(-500)$$

$$P = 12$$

Calculation of Profit/Loss

Profit/loss = Total revenue – Total cost

$$TR = PQ$$

$$= 12 \times (-500) = -6000$$

$$TC = 8Q - 0.006002(-500)^2$$

$$= -2499.50$$

Profit/Loss = – 6000 – (– 2499.50)

Profit/Loss = – 3500.50

2. Suppose that you are a monopoly faced with a demand curve given by Q = 100 – 2P. You have a constant marginal cost equal to $10. Calculate your optimal price and quantity. Show that your price adheres to the optimal markup rule based on demand elasticity.

Sol :

Calculation of Optimal Price and Quantity

Given that,

$$Q = 100 - 2P,\ MC = \$\ 10$$

Dividing equation by 2

$$\frac{Q}{2} = \frac{100}{2} - \frac{2P}{2} \text{ (or) } Q\frac{1}{2} = \frac{100}{2} - \frac{2P}{2}$$

$$Q\frac{1}{2} = 50 - P$$

$$P = 50 - 0.5\,Q$$

$$TR = PQ$$

$$= (50 - 0.5\,Q)Q$$

$$= 50Q - 0.5Q^2$$

$$MR = \frac{d}{dQ}(PQ)$$

$$= 50 - (0.5 \times 2)\,Q$$

$$= 50 - Q = MC = 10$$

$$Q = 50 - 10$$

$$Q = 40$$

$$= 50 - 0.5\,(40)$$

$$= 50 - 20$$

$$P = 30$$

Calculating of Elasticity

$$\varepsilon = \frac{dQ}{DP}\frac{P}{Q}$$

$$= 2\left(\frac{30}{40}\right) = 1.5$$

Optimal Markup rule

$$P = \frac{MC}{1+\frac{1}{\varepsilon}}$$

$$= \frac{10}{1+\frac{1}{1.5}} = \$\ 60$$

2.6 Demand Estimation for Firm & Industry

Q31. Define Demand Estimation. Explain the importance of Demand Estimation.

Ans :

Demand estimation tries to find out expected present salesfevel, given the present state of demand determinants. Usually, demand estimation is done for a short period. Every firm must try to obtain the estimate of demand function for its product. The demand forecasting process begins with demand estimation.

In demand estimation, the relationship between the demand for a product and its determinant variables like price, GNP or GDP, population, price of substitutes and complements, etc., is calculated to make important decisions.

Importance

1. It is necessary for business manager to have information about market demand to develop strategies relating to price, sales and output to overcome the dynamic changes in determinants of demand.
2. Demand estimation helps in identifying the consumer demand behaviour which is useful in making effective business decisions.
3. It helps in ascertaining the effects of changes in excise duties, price and GNP on demand with respect to personal computers.
4. The consequences of increase in excise duties on sales can be known with demand estimation for products like cigarette etc.
5. It helps the manufactures to determine the increase in sales with the increase in their advertisement and publicity.
6. When the government liberalized its import policy, firm can estimate the changes in proportion of demand for domestic and imported goods through demand estimation,

Q32. Explain the various methods of Demand Estimation.

Ans :

From the above points it is clear that demand estimation is useful for every business. But demand estimation is not an easy task. Demand estimation is done with the help of methods, the important methods of demand estimation are as follows,

1. Market experimentation
2. Survey of consumers future plans
3. Regression analysis.

1. Market Experiment Method

The market experiment method is again classified into two methods. They are,

(a) Actual Market Method

In this method, the reactions of consumer is monitored through sales outlets which are set up in different areas. In this experiment, different variables effecting demand are mixed and then reaction of consumers is recorded. Considerably, this experiment gives a clear picture about the market but it is expensive.

(b) Market Simulation Method

In this method, consumers are given a specific amount of money to do shopping in simulated market. Then the behaviour of consumer is observed with respect to price and quality of good, its packaging, advertisement, etc. It is more expensive than actual market method and usually consumers do not take it seriously.

2. Survey of Consumer's Future Plans

In this method, businessmen contact with consumers personally to identify their future purchase plans. It can be done with the help of two methods. They are,

(a) Census method

(b) Sample method

(a) Census Method

In this method, all the consumers are contacted and their probable demand is reviewed. It is costly and sometimes there will be changes in consumer's demand due to changes in conditions.

(b) Sample Survey Method

In this method, demand of selected consumers of a population is considered to be the market demand. This method is cheaper than census method but its reliability depends on sample of the population.

3. Regression Analysis

Regression analysis is a statistical technique which is useful in estimating demand by using independent variables like income, price of commodity, advertisement, etc. Regression analysis is also of two types. They are,

(a) Simple regression analysis

(b) Multiple regression analysis.

(a) Simple Regression Analysis

In simple regression analysis, the quantity demanded is considered to be a function of a single independent variable.

(b) Multiple Regression Analysis

In multiple regression analysis; demand is estimated by considering it as a function of two or more independent variables which change at the same time.

2.7 Demand Forecasting Methods

Q33. Define Demand Forecasting. What are the factors determining Demand Forecasting?

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

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

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)

Q34. What are the characteristics of good Demand Forecasting ?

Ans :

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.

Q35. What is the need for Demand Forecasting?

Ans :

Forecasting the demand for its product or products is the essential function for an organization irrespective of its nature. Many organizations follow it as a custom to completely and accurately forecast the demand of its products regularly. The need or the necessity for demand forecasting arises due to the following purposes served by it.

(i) It serves as a road map for production plans.

(ii) It plays a significant role in situations of uncertain production or demand.

(iii) The outcomes of demand forecasting facilitate the managers to line up their business activities.

(iv) The demand forecasting results from a basis for (EXIM) export and import policy and fiscal policy.

(v) In situations of competition, it can help a manager/businessman to take decisions regarding inputs of production process such as labour, capital etc.

Q36. Explain the steps involved in Demand Forecasting ?

Ans :

While undertaking demand forecasting, following steps are involved,

1. Identification of Objectives

The first step is to identify the objectives for forecasting. These objective may be estimated based on many aspects such as quality, composition, price, sales planning etc.

2. Determining the Nature of Goods Under Consideration

The next step is important because different pattern are involved for different category of goods, consumer durable goods and consumer non-durable goods. This step helps to identify the approach of forecasting and determine the variable to be considered for forecasting.

3. Proper Method to be Selection

The next part of process is to select a proper method for forecast. The issue is concern with the objectives of forecasting, type of data available, period for which forecast is to be made, level of forecast etc.

4. Interpretation of Results

The final decision on demand forecasting objective is done on the basis of interpretation of the forecast. Efficiency of forecast mostly depends on efficiency of interpretation of results. Most of the time, the forecast result is based on the factors like business environment, international economic, political conditions, government policy etc. Again their is a need required to revise the forecast in the changing nature of circumstances.

2.7.1 Methods

Q37. Explain various methods of Demand Forecasting.

(OR)

Discuss diffeent methods of forecasting demand for a new product.

(OR)

Briefly write about methods of Demand Forecasting.

Ans : **(Nov.21, Feb.-20, Aug.-18, Jan.-18)**

Forecasting demand is not an easy exercise. It may be easy only in the case of a very few products or services, where the demand for the product does not change from time to time or competition is not significant, it may be relatively easy to forecast demand for a particular product or service. In a majority of the cases, market demand in general and company demand in particular change from year to year. In such a case, the determining factor for marketing success is only a good forecasting technique. The more the demand is sensitive, the more important it is to forecast it accurately. This calls for an elaborate forecasting process.

There are many methods of forecasting demand. To forecast demand, we need to build a certain base of information. To build such an information base, we need to consider what the customers say, what the customers do, and how the customers behaved in a given marketing situation.

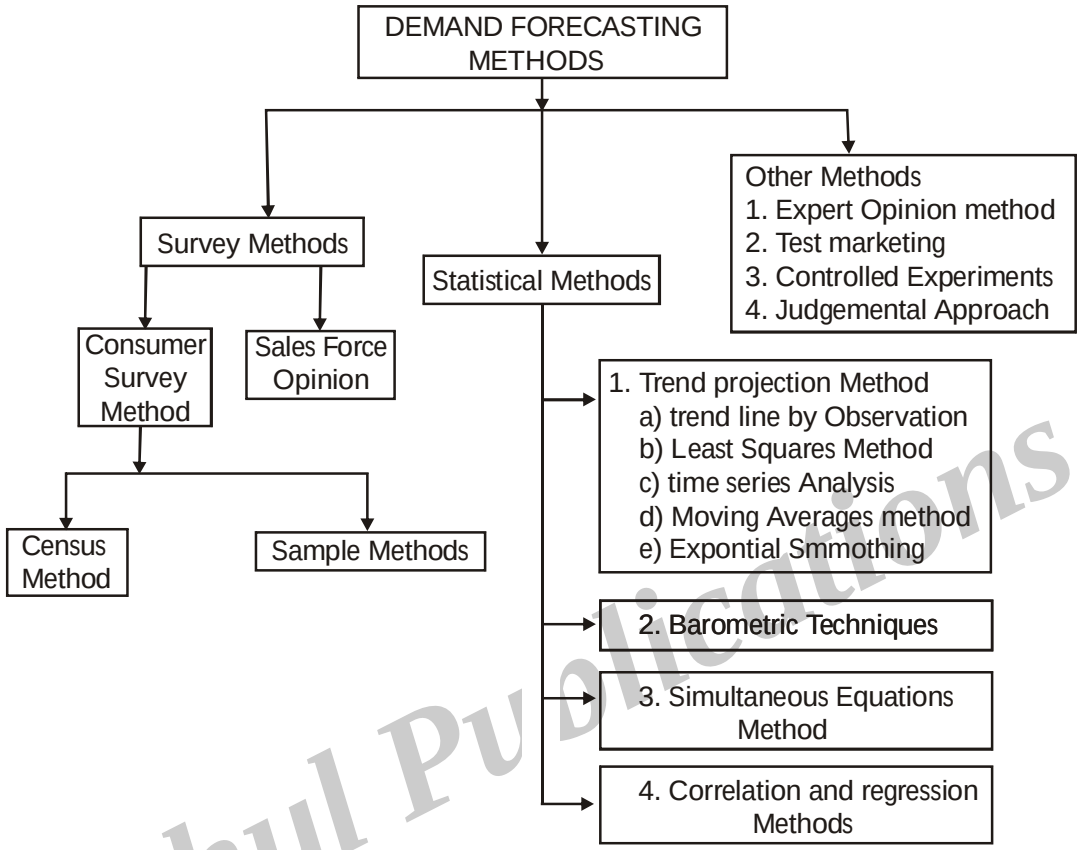


Fig. : Demand Forecasting Methods

I) Survey Method

(a) Consumers Survey Method

The consumer opinion survey method among other forecasting methods is regarded as the significant method of forecasting. With the help of this method, a firm can question the consumer regarding what and how much they are planning to buy a commodity at different prices of a product for a particular year. This method further divided into census method and sample method.

(i) Census Method

Under census method, all consumers are contacted to know their preferences for the products in future. The interviews are conducted either orally or through questionnaire. With the help of census method the probable demand of all consumers is summed up.

(ii) Sample Method

Under sample method, the forecasted demand for the sample unit can be found out to find the total demand in the market. This is done by multiplying the sample results by the ration of size of population to size of sample. However the reliability depends upon the representativeness of the population.

(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.

Here also, there is a danger that salesmen may sometimes become biased in their views. The sales people are paid based on their results. Where the targets are set based on the results of the survey of the sales force, and the payment is linked to achievement of these targets, incentive is paid to those who achieve more than their targets. To prevent the company from fixing higher targets, it is quite likely that they understate or overstate the demand to eventually get low or high sales quota set for them.

This method is appropriate when

- sales persons are likely to be most knowledgeable sources of information
- the salesmen are cooperative
- bias factor can be corrected by means of growth factor. Where the company finds that the sales position is forecast lower, it may correct it by adding to it the estimated difference.

II) Statistical Methods

For forecasting the demand for goods and services in the long-run, statistical and mathematical methods are used considering the past data.

1. 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.

(a) Trend line by observation

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

(b) Least Squares Method

Certain statistical formulae are used here to find the trend line which 'best fits' the available data. The trend line is the basis to extrapolate the line for future demand for the given product or service on graph. Here it is assumed that there is a proportional (linear) change in sales over a period of time. In such a case, the trend line equation is in linear form. Where this assumption does not hold good, the equation can be in non-linear form.

The estimating linear trend equation of sales is written as :

or $S = x + y(T)$

Where x and v have been calculated from past data S is sales and T is the year number for which the forecast is made. To find the values of x and y, the following normal equations have to be stated and solved :

$$\Sigma S = Nx + y\,\Sigma T$$

$$\Sigma ST = x\Sigma T + y\Sigma T^2$$

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

(c) Time series analysis

Where the surveys or market tests are costly and time-consuming, statistical and mathematical analysis of past sales data offers another method to prepare the forecasts, that is, time series analysis. One major requirement to administer this technique is that the product should have actively been traded in the market for quite sometime in the past. In other words, considerable data on the performance of the product or service over significantly large period should be available for better results under this method. Time series emerge from such a data when arranged chronologically. Given significantly large data, the cause and effect relationships can be discovered through quantitative analysis.

(d) Moving Average Method

Moving average method is based on past sales data and it is used for short term forecasting and it is based on assumption that the future is the average of past performance.

(e) Exponential Smoothing

The exponential smoothing which is used for short-term forecasting is a popular technique that is used in finding the values which are exponentially weighted. Each weight Jis assigned a value that reflects the degree of significance of that value. The greater weights are assigned to the most recent values which are closely connected to forecasting.

2. 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.

3. 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.

Like two least squares, where regression of investment (I) is found on all the predetermined variables such as government policy, competition, level of technology and so on, which are beyond the control of the management. These include the exogeneous variables such as government policy and logged endogenous variables such as S_{t-1}.

This method is more practical in the sense that it requires to estimate the future values of only predetermined variables. It is an improvement over regression method whereas in regression equation, the value of both exogenous and endogenous variables have to be predicted. It is no better than regression method. It inherits all the limitations of regression method.

It is difficult to compute where the number of equations is larger.

4. Correlation and Regression Methods

Correlation and regression methods are statistical techniques. Correlation describes the degree of association between two variables such as sales and advertisement expenditure. When the two variables tend to change together, then they are said to be correlated. The extent to which they are correlated is measured by correlation coefficient. Of these two variables, one is a dependent variable and the other is an independent. If the high values of one variable are associated with the high values of another, they are said to be positively correlated.

For example, if the sales have gone up as a result of increase in advertisement expenditure, we can say that the sales and advertisement are positively correlated. Similarly, if the high values of one variable are associated with the low values of another, then they are said to be negatively correlated. For example, if the price of a product has come down; and as a result, there is increase in its demand, the demand and the price are negatively correlated. In other words, where the functional relationship is analysed with the independent variable, it is simple correlation. It is likely that there could be several independent variables, and in such a case, it is called multiple correlation. Correlation coefficient ranges between +1 and —1. It does not exceed this range. Where the correlation coefficient is zero, it indicates that the variables under study are not related at all.

In *regression* analysis, an equation is estimated which best fits in the sets of observations of dependent variables and independent variables. The best estimate of the true underlying relationship between these variables is thus generated. The dependent (unknown) variable is then forecast based on this estimated equation, for a given value of the independent (known) variable. The method of least squares is applied in most regressions. As the regression coefficients estimated from the sample observations are merely the best estimate of true population parameters, the regression equation cannot exactly predict the dependent variable for a given value of the independent variable. In cases of more than one independent variable having significant effect upon the dependent variable, multiple linear regression is employed.

III) Other Methods

1. Expert Opinion Method

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.

An expert is good at forecasting and analyzing the future trends in a given product or service at a given level of technology. The services of an expert could be advantageously used when a firm uses general economic forecasts or special industry forecasts prepared outside the firm. It may be easy to administer this method where there are parameters clearly defined to make forecasts. These act as guidelines.

This method also has certain advantages and disadvantages.

The main advantages of this method are :

- results of this method would be more reliable as the expert is unbiased, has no direct commercial involvement in its primary activities
- independent demand forecasts can be made relatively quickly and cheaply
- where there are different points of view among different experts, consensus can be arrived through an objective analysis. The experts can be asked to explain the reasons why the forecasts are out of line with the consensus. These can be taken into account before taking the final decisions. Sorting out the differences in the estimates in this way is called Delphi Technique.
- this method constitutes a valid strategy particularly in the case of new products, in respect of which there is no other alternative or source of information.

The main disadvantage is that an expert cannot be held accountable if his estimates are found incorrect.

2. 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.

Automobile companies maintain a panel of consumers who give feedback on the style and design and specifications of the new models. Accordingly these companies make necessary changes, if any, and launch the product in the wider markets.

In test marketing, the entire product and marketing programme is tried out for the first time in a small number of well-chosen and authentic sales environment. The primary objective, here, is to know whether the customer will accept the product in the present form or not.

The advantages of test marketing are:

(a) the acceptability of the product can be judged in a limited market

(b) before it is too late, the corrections can be made to the product design, if necessary. Thus, major catastrophy, in terms of failure, can be avoided.

(c) the customer psychology is more focussed in this method and the product and services are aligned or redesigned accordingly to gain more customer acceptance.

The following are the disadvantages of this method:

- It reveals the quality of the product to the competitors before it is launched in the wider market. The competitors may bring about a similar product or often misuse the results of the test marketing against the given company.
- It is not always easy to select a representative audience or market.
- It may also be difficult to extrapolate the feedback received from such a test market, particularly where the chosen market is not fully representative.

3. 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.

This method is used to gauge the effect of a change in some demand determinant like price, product design, advertisement, packaging, and so on.

This method is still in the infancy stage and not much tried because of the following reasons:

- It is costly and time consuming
- It involves elaborate process of studying different markets and different permutations and combinations that can push the product aggressively
- If it fails in one market, it may affect other markets also

4. 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. Even when the above methods are used, the forecasting process is supplemented with the factor of judgement for the following reasons :

- Historical data for significantly long period is not available
- Turning points in terms of policies or procedures or causal factors cannot be precisely determined
- Sales fluctuations are wide and significant
- The sophisticated statistical techniques such as regression and so on. may not cover all the significant factors such as new technologies and so on, affecting demand
- The results of statistical methods are more reliable at the national level rather than firm or industry level. In such a case, the management has to rely more on its judgement to assess the validity of such results.

Short Question and Answers

1. What is Cross Elasticity of Demand?

Ans :

The change (increase or decrease) in the demand for one good in response to the change (increase or decrease) in price of the related good is called the cross elasticity of demand. Cross elasticity is always negative for complementary demand.

Example

Due to increase in price of sugar, the demand for tea and coffee is decreases.

Cross elasticity is positive for substitutes.

The demand for jeans goes up if there is an increase in the price of formal parts.

$$\text{Cross elasticity of demand} = \frac{\text{Proportionate change in quantity demanded for product B}}{\text{Proportionate change in price of product A}}$$

The same is expressed as,

$$Edc = \frac{\frac{(Q_2 - Q_1)}{Q_1}}{\frac{(P_2A - P_1A)}{P_1A}}$$

Where,

Q_1 = Quantity demanded before change.

Q_2 = Quantity demanded after change.

P_2 = Price before change.

P_2 = Price after change in the case of product.

2. Law of Marginal Utility

Ans :

The law of diminishing marginal utility was first propounded by 19th century German economist H.H. Gossen which explains the behavior of the consumers and the basic tendency of human nature. Hence, this law is also known as Gossen's First Law. This was further modified by Marshall.

(i) According to Marshall - The additional benefit a person derives from a given increase of his stock of anything diminishes with the growth of the stock that he already has.

(ii) According to Paul A. Samuelson - As the amount consumed of a good increases, the marginal utility of the good leads to decrease.

As per the definitions, we can conclude that, if the consumer consumes goods continuously, the utility obtained from every successive unit goes on diminishing. If the consumer is consuming the goods

continuously, firstly he reaches the point of maximum satisfaction which is known as level of satiety. If he continues to consume the goods again, the utility obtained from that particular goods goes in negative aspect or he gets inutility.

Assumptions

(i) The consumer who is consuming the goods should be logical and knowledgeable to consume every unit of goods.

(ii) The goods which are to be consumed should be equal in size and shape.

(iii) Consumer should consume the goods without time gap.

(iv) The consumer's income, preference, taste and fashion should not be changed while consuming the goods.

(v) To hold the law good, utility should be measured in countable units or cardinal numbers. The utility obtained from those goods is measured in 'utils' unit.

(vi) As we know that money is the measuring rod of utility, being so, marginal utility of money should remain constant during consumption of the goods.

3. What is demand function?

Ans :

Demand function is a function which describes a relationship between one variable and its determinants, it describes how much quantity of goods is bought at alternative prices of good and related goods, alternative income levels, and alternative values of other variables affecting demand. Thus, the demand function for a good relates the quantity of a good which consumers demand during a given period to the factors which influence the demand. The above factors can be built up into a demand function.

Mathematically, the demand function for a product A can be expressed as follows:

$Qd = f(P, I, T, P_R, E_P, E_I, S_P, D_c, A, O)$

Where

Qd refers to quantity of demand and it is a function of the following variables:

P → refers to price of the product;

I → refers to Income level of the consumer;

T → refers to tastes and preferences of the consumer;

P_R → refers to prices of related goods (substitutes/complementary);

E_P → refers to expectations about the prices in future;

E_1 → refers to expectations about the incomes in future,

S_P → refers to size of population;

D_c → refers to distribution of consumers over different regions;

A → refers to advertising efforts and

O → refers to any other factors capable of affecting the demand.

4. Explain the determinants of demand.

Ans :

(i) Price of a commodity

The price of a commodity or service is generally inversely proportional to the quantity demanded while other factors are constant. This implies that when the price of the commodity or service rises, its demand falls and vice versa.

(ii) Price of related goods

The demand for a good or service not only depends on its own price but also on the price of related goods. Two items are said to be related to each other if the change in price of one item affects the demand for the other item. Related goods can be categorized as follows:

- **Substitute or competitive goods**

  These goods can be used interchangeably as they serve the same purpose; thus, are the competitors of each other. For example, tea and coffee, cold drink and juice, etc. The demand for a good or service is directly

proportional to the price of its substitute. Consider the two brands of biscuits; Britannia's Good Day and Sunfeast's Cookies. If the price of Good Day increases, consumers will tend to switch to Sunfeast's Cookies. Therefore, the demand for Sunfeast's Cookies is influenced by the rise in the price of Britannia's Good Day. Therefore, these are substitutes or competitors of each other. Complementary goods: Complementary goods are used jointly; for example, car and petrol. There is an inverse relationship between the demand and price of complementary goods. This implies that an increase in the price of one good will result in fall in the demand of the other good. For example, an increase in the price of mobile phones not only would lead to fall in the quantity demanded but also lower the demand for mobile cover or scratch guards. The use of SIM cards might confuse students as even if the new mobile is purchased the old SIM card can be inserted and that does not lead to any change in demand.

- **Complementary goods**

  Complementary goods are used jointly; for example, car and petrol. There is an inverse relationship between the demand and price of complementary goods. This implies that an increase in the price of one good will result in fall in the demand of the other good. For example, an increase in the price of mobile phones not only would lead to fall in the quantity demanded but also lower the demand for mobile cover or scratch guards. The use of SIM cards might confuse students as even if the new mobile is purchased the old SIM card can be inserted and that does not lead to any change in demand.

5. Total Utility

Ans :

Total utility refers to complete satisfaction acquired by a consumer after consuming the various units of the commodity. Total utility increases with consumption of more units but to some extent. Consumer may reach the point of saturation when he attains maximum total utility but if he continues consumption of commodity then his total utility began to fall.

6. Marginal Utility

Ans :

The concept of marginal utility is equally important for utility analysis. Marginal utility is defined as the utility derived from the marginal or additional unit of a commodity consumed by an individual. It can also be defined as the addition to the total utility of a commodity resulting from the consumption of an additional unit. Therefore, marginal utility, MU of a commodity X, is the change in the total utility, ΔTU, attained from the consumption of an additional unit of commodity X. Mathematically, it can be expressed as:

$$MU_x = \frac{\Delta TUx}{\Delta Qx}$$

Where TU_x = Total utility, ΔQ_x = Change in quantity consumed by one additional unit

When total number of unit consumed is n, marginal utility can also be expressed as:

MU of nth unit = $TU_n - TU_{n-1}$

7. 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 :

(i) It is the quantity desired at a given price.

(ii) It is the demand at a price during a given time.

(iii) 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".

8. Explain the features of demand.

Ans :

The various features of demand are:

(a) Difference between Desire and Demand

Demand is the amount of commodity for which a consumer has the willingness and the ability to buy .These is difference between need and demand .Demand is not only the need, it also implies that the consumer has the money to purchase it.

(b) Relationship between Demand and price

Demand is always at a price .unless price is stated, the amount demanded has no meaning. The consumer must know both the price and the commodity and he will tell his amount demanded.

(c) Demanded at a point of time

The amount demanded must refer to some period of time such as 10 quintals of wheat per year or six shirts per year of five kilos of sugar per month .not only this, the amount demanded and the price must refer to a particular data.

9. Define Law of Demand.

Ans :

Meaning

The law of demand states a consumers behaviour, in demanding a commodity in relation to the variations in its prices. It expresses a functional relationship between two variables of demand relation i.e., the price and the quantity demanded of a commodity.

The law of demand states that other things remaining equal, the quantity demanded of a commodity increases when its price falls and decrease when its price rises.

Definitions

(i) **According to Marshall,** "The amount demanded increases with a fall in price and diminishes when price increases, other things being equal".

(ii) **According to Robertson,** "Other things being equal, the lower the price at which a thing is offered, the more a man will be prepared to buy it."

(iii) **According to Ferguson,** "Law of Demand, the quantity demanded varies inversely with price."

10. Define Elasticity of Demand.

Ans :

Meaning

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 neoclassical 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.

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 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 Building,** "Price elasticity of demand measures the responsiveness of the quantity demanded to the change in price."

(iii) **According to 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."

11. Define Demand Estimation.

Ans :

Demand estimation tries to find out expected present salesfevel, given the present state of demand determinants. Usually, demand estimation is done for a short period. Every firm must try to obtain the estimate of demand function for its product. The demand forecasting process begins with demand estimation.

In demand estimation, the relationship between the demand for a product and its determinant variables like price, GNP or GDP, population, price of substitutes and complements, etc., is calculated to make important decisions.

12. Importance of Demand Estimation.

Ans :

(i) It is necessary for business manager to have information about market demand to develop strategies relating to price, sales and output to overcome the dynamic changes in determinants of demand.

(ii) Demand estimation helps in identifying the consumer demand behaviour which is useful in making effective business decisions.

(iii) It helps in ascertaining the effects of changes in excise duties, price and GNP on demand with respect to personal computers.

(iv) The consequences of increase in excise duties on sales can be known with demand estimation for products like cigarette etc.

(v) It helps the manufactures to determine the increase in sales with the increase in their advertisement and publicity.

13. Define 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

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.

14. What is the need for Demand Forecasting?

Ans :

Forecasting the demand for its product or products is the essential function for an organization irrespective of its nature. Many organizations follow it as a custom to completely and accurately forecast the demand of its products regularly. The need or the necessity for demand forecasting arises due to the following purposes served by it.

(i) It serves as a road map for production plans.

(ii) It plays a significant role in situations of uncertain production or demand.

(iii) The outcomes of demand forecasting facilitate the managers to line up their business activities.

(iv) The demand forecasting results from a basis for (EXIM) export and import policy and fiscal policy.

(v) In situations of competition, it can help a manager/businessman to take decisions regarding inputs of production process such as labour, capital etc.

15. Delphi Technique

Ans :

The Delphi method is a forecasting process framework based on the results of multiple rounds of questionnaires sent to a panel of experts. After each round of questionnaires, the experts are presented with an aggregated summary of the last round, allowing each expert to adjust their answers according to the group response

16. Consumer Equilibrium

Ans :

Consumer's Equilibrium means a state of maximum satisfaction. A situation where a consumer spends his given income purchasing one or more commodities so that he gets maximum satisfaction and has no urge to change this level of consumption, given the prices of commodities, is known as the consumer's equilibrium.

17. Consumer Surplus

Ans :

Consumer surplus, also known as buyer's surplus, is the economic measure of a customer's excess benefit. It is calculated by analyzing the difference between the consumer's willingness to pay for a product and the actual price they pay, also known as the equilibrium price. A surplus occurs when the consumer's willingness to pay for a product is greater than its market price.

18. Income Elasticity of Demand

Ans :

Meaning

The price, the income of consumers is also an important determinant of the demand for the product. An increase in the income of consumers increases the demand for the product even if the price remains constant. The responsiveness of quantity demanded with respect to the income of consumers is called the income elasticity of demand. The following are some important popular definitions of income elasticity of demand:

Definition

(i) According to Watson, "Income elasticity of demand means the ratio of the percentage change in the quantity demanded to the percentage in income."

(ii) According to Richard G. Lipsey, "The responsiveness of demand to change in income is termed as income elasticity of demand."

Mathematically, the income elasticity of demand can be stated as:

$$e_y = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

Where,

Percentage change in quantity demanded =

$$\frac{\text{New quantity demanded - Original Quantity demanded } (\Delta Q)}{\text{Original quantity demanded } (Q)}$$

Percentage change in income = $\frac{\text{New income -Original income } (\Delta Y)}{\text{Original income } (Y)}$

Thus, the formula for calculating the price elasticity of demand is as follows:

$$e_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

Where

Q is original quantity demanded

Q_1 is new quantity demanded

$$\Delta Q = Q_1 - Q$$

Y is original income

Y_1 is new income

$$\Delta Y = Y_1 - Y$$

Choose the Correct Answer

1. In short run, firms can adjust their production by changing their. [b]
   (a) Fixed factors (b) Variable factors
   (c) Semi-fixed factors (d) Both (a) and (b)
2. Which of the following pairs of goods is an example of substitutes? [b]
   (a) Tea and sugar (b) Tea and coffee
   (c) Shirt and pant (d) Car and petrol
3. A contraction is the upward movement along a demand curve, indicting that lower quantity demanded for a given change in the price of the good. What is this change ? [b]
   (a) Decrease (b) Increase
   (c) Infinite change (d) Negligible change
4. Incase of Giffen's goods, the demand curve. [b]
   (a) Slopes downwards (b) Slopes upwards
   (c) Intersects supply curve (d) Meets cost curve
5. _____ is a tabular representation of relationship between the amount demanded of a commodity and different price levels of that commodity. [a]
   (a) Demand schedule (b) Law of demand
   (c) Market demand function (d) Individual demand function.
6. The demand curve slopes downwards due to [d]
   (a) Law of diminishing marginal utility (b) Income effect
   (c) Substitution effect (d) All the above.
7. _____ refers to the changes in the quantity demanded of a commodity with respect to the changes in the prices of the related goods. [b]
   (a) Price demand (b) Cross demand
   (c) Income demand (d) Market demand.
8. _____ is the ratio of proportionate change in the quantity demanded of a commodity to proportionate change in its price. [b]
   (a) Point elasticity of demand (b) Price elasticity of demand
   (c) Arc elasticity of demand (d) Gross elasticity of demand.
9. A commodity is said to have _____ demand when even a large change in the price of commodity causes no change in the quantity demanded. [c]
   (a) Perfectly elastic (b) Relatively elastic
   (c) Perfectly inelastic (d) Unitary elastic.
10. Price elasticity of demand is measured with the help of _____ [d]
   (a) Percentage method (b) Graphical method
   (c) Slope/mathematical method (d) All the above

Fill in the blanks

1. _____ means the various quantities of goods that would be purchased per time period at different prices in a given market.
2. The _____ for a commodity brings out the relationship between the factors influencing its demand and the quantity demanded.
3. The _____ represents a functional relationship between price and quantity demanded.
4. The _____ shows the various quantities of commodities purchased by a person or by a family or by a household at a different.
5. _____ shows the total quantity of a commodity purchased by all the people in the market at different prices.
6. _____ measures the responsiveness of demand to changes in price.
7. The _____ of the consumers is the total revenue or income of the sellers (firms).
8. In the case of _____ the demand generally tends to be inelastic in the short run.
9. In the short period, demand in general will be less _____.
10. The changes in quantity of demand is _____ to changes in income is called less than '1'.

ANSWERS

1. Demand
2. Demand function
3. Demand schedule
4. Individual demand schedule
5. Market demand schedule
6. Elasticity of demand
7. Total expenditure
8. Durable goods
9. Elastic
10. Less than

UNIT III

Production & Cost structure, production function, Determinants of Production, Theories of Production, Benham Theory, Law of Two Variable proportions, Law of Returns to Scale – Cost Concepts, Types of Costs, Short-term and Long-term Cost Curves, Learning Curve, Iso-cost Curve – Equilibrium – BEP Analysis (Numeric).

3.1 PRODUCTION

Q1. Explain the Concept of Production

(OR)

Define Production.

Ans :

Meaning

Production can be defined as the process of converting the inputs into outputs. Inputs include land, labour and capital, whereas output includes finished goods and services. In other words, production is an act of creating value that satisfies the wants of the individuals.

Organizations engage in production for earning maximum profit, which is the difference between the cost and revenue. Therefore, their production decisions depend on the cost and revenue. The main aim of production is to produce maximum output with given inputs.

Definitions

(i) **According to James Bates and J.R. Parkinson,** "Production can be defined as an organized activity of transforming physical inputs (resources) into outputs (finished products), which will satisfy the products' needs of the society."

(ii) **According to J.R. Hicks,** "Production is an activity whether physical or mental, which is directed to the satisfaction of other people's wants through exchange."

For attaining the maximum output, inputs are combined in more than one way. The most efficient combination is chosen from the different combinations. The decisions for choosing the combinations depend upon the purchase of inputs, distribution of budget among inputs, allocation of inputs and combination of output.

Production is considered very important by organizations because of the following reasons:

- Helps in creating value by applying labour on land and capital.
- Improves welfare as more commodities mean more utility.
- Generates employment and income, which develops the economy.
- Helps in understanding the relation between cost and output.

3.1.1 Production Function

Q2. Define Production function. How can a producer find its useful?

Ans : **(Nov.-20, Jan.-19, Aug.-17, Feb.-17)**

Definitions

Production function can be defined as a technological relationship between the physical inputs and physical output of the organization.

(i) **According to Stigler,** "production function is the name given to the relationship between the rates of input of productive services and the rate of output…"

(ii) **According to Samuelson,** "Production Function is the technological relationship, which explains the quantity of production that can be produced by a certain group of inputs. It is related with a given state of technological change."

(iii) According to In the words of Watson, "The relation between a firm's physical production (output) and the material factors of production (input) is referred to as production function."

Inputs include the factors of production, such as land, labour, capital, whereas physical output includes quantities of finished products produced. The long-run production function (Q) is usually expressed as follows:

$$Q = f(LB, L, K, M, T, t)$$

Where,

LB = land and building

L = labour

K = capital

M = raw material

T = technology

t = time

Q3. Explain Cobb Douglas production function

Ans : **(Nov.-20, June-18, Feb.-17)**

A very popular production function which deserves special mention is the Cobb-Douglas function. It relates output in American manufacturing industries from 1899 to 1922 to labour and capital inputs, taking the form :

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

Where

P = Total output

L = Index of employment of labhour in manufacturing and

C = Index of fixed capital in manufacturing

The exponents a and 1 – a are the elasticitics of production that is, a and 1 – a measure the percentage response of output to percentage changes in labour and capital respectively. The function estimated for the U.S.A. by Cobb and douglas is:

$$P = 1.01\ L^{.75} - C^{.25},\ R^2 = 0.9409$$

The production function shows that a 1 per cent changes in labour input, capital remaining constant, is associated with a 0.75 per cent change in output. Similarly, a 1 per cent change in capital labour remaining constant, is associated with a 0.25 per cent change in output. The coefficient of determination (R^2) means that 94 per cent of the variations on the dependent variable (P) were accounted for by the variations in the independent variables (L and C).

An important point to note is that the Cobb-Douglas function indicates constant returns to scale. That is, if factors of production are each raised by 1 per cent, the output will increase by 1 per cent. This indicates that no economies or diseconomies of large scale are evident on the average, large or small-scale plant may be equally profitable in the U.S. manufacturing industry. In other words, one can assume constant average and marginal production costs for the U.S. industries during that period.

Fig. illustrates the graph of Cobb-Douglas production function $X = 10A^{0.4}\ B^{0.6}$ where output X = 50.

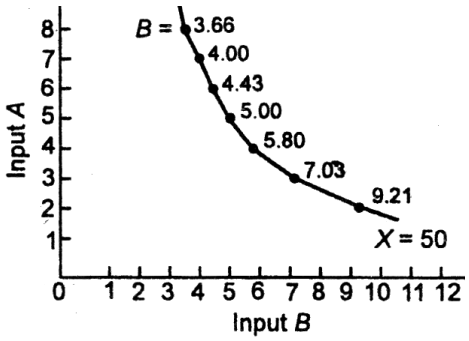


Fig. : Graph of a Cobb-Douglas Production Function for X = 50

Criticism

1. The production function ordinarily discussed in economics is a rigorously developed micro-economic concept, However, Douglas and his colleagues, by estimating production function for national economies for manufacturing sectors, and even for industries, transferred" strictly micro-economic concept to a macro-economic setting, without sufficiently justifying their act on logical economic grounds.

Therefore, the result of their studies, in the form of equations they derived, may be incorrect, and hence the interpretations based on their equations are suspect.

2. The production function of economic theory assumes that the quantities of inputs employed are those that are actually used in production, so that no variable input is ever redundant. In the Douglas studies, only labour was measured by the quantity actually used in production, whereas capital was measured by capital investment, i.e., the quantity available for production. Therefore, with the possible exception of the years in which full employment and prosperity prevailed and industry made reasonably full use of the available inputs, the measure of capital employed was not the theoretically correct one. Only if annual capital input always remained a constant proportion of total capital investment, would the elasticities be the same.

In spite of the criticism, the Cobb-Douglas type of production function has been found useful for interpreting economic results, since the elasticities of production are given directly by the exponents when the data are in original form, or by the regression coefficients when the data are in logarithmic form.

Q4. Explain CES production function.

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

In Constant Elasticity of Substitution (CES) production function, the elasticity of substitution is not equal to unity, it is rather constant. Below is a general form of CES production function,

$$X = \gamma[KC^{-\alpha} + (1-K)L^{-\alpha}]^{\frac{-v}{\alpha}}$$

Where,

X = Output

C = Capital

L = Labour

The above function is constrained by

$\gamma > 0, 0 < W, \propto - I.$

The three variables in the function are X, C and L and the four parameters are y, K, x and v.

(a) γ parameter is used to measure efficiency and the more the value of y, the more will be the output.

(b) AT is a distribution parameter or the capital intensity factor coefficient and (1 – K) denotes the labour intensity coefficient.

(c) v denotes the degree of returns to scale. Using the substitution parameter oc, we can derive elasticity of substitution (σ).

$$\propto = \left[1 = \frac{1}{\sigma}\right]$$

Characteristics

The properties/characteristics of CES production function are as follows,

1. The value of elasticity of substitution (σ) is derived based on the value of substitution parameter ($\propto$).
2. If the constant returns to scale v is assumed to be 1, the marginal products of capital and labour are positive.
3. There are downward sloping curves for marginal products i.e.,

$$\frac{\partial^2 X}{\partial L^2} < 0 \text{ and } \frac{\partial^2 X}{\partial C^2} < 0$$

4. The marginal product of an input increase as a result of increase in other factor inputs.

Q5. Explain the assumptions, uses and limitations of Production function.

Ans :

Assumptions

Production function is based on the following assumptions:

- Production function is related to a specific time period.
- The state of technology is fixed during this period of time.
- The factors of production are divisible into the most viable units.

- There are only two factors of production, labour and capital.
- Inelastic supply of factors in the short-run period.

Uses

The uses of production function are as follows:

- Helps in making short-term decisions, such as optimum level of output.
- Helps in making long-term decisions, such as deciding the production level.
- Helps in calculating the least cost combination of various factor inputs at a given level of output.
- Gives logical reasons for making decisions. For example, if price of one input falls, one can easily shift to other inputs.

Limitations

The advantages, production function also suffers from some limitations, which are given as follows:

- Restricts itself to the case of two inputs and one output.
- Assumes smooth and continuous curve, which is not possible in the real world, as there are always discontinuities in production.
- Assumes technology as fixed, which is not possible in the real world.
- Assumes perfectly competitive market, which is rare in the real world.

3.1.2 Determinants of Production

Q6. What are the factors of Production?

Ans :

Factors of production are the inputs that are used for producing the final output with the main aim of earning an economic profit. Land, labour, capital and enterprise are the main factors of production. Each and every factor is important and plays a distinctive role in the organization.

Let us learn these factors of production in detail:

- **Land:** Land is the gift of nature and includes the dry surface of the earth and the natural resources on or under the earth's surface, such as forests, rivers, sunlight, etc. Land is utilized to produce income called rent. Land is available in fixed quantity; thus, does not have a supply price. This implies that the change in price of land does not affect its supply. The return for land is called rent.
- **Labour:** Labour is the physical and mental efforts of human beings that undertake the production process. It includes unskilled, semi-skilled and highly skilled labour. The supply of labour is affected by the change in its prices. It increases with an increase in wages. The return for labour is called wages and salary.
- **Capital:** Capital is the wealth created by human beings. It is one of the important factors of production of any kind of goods and services, as production cannot take place without the involvement of capital. Capital is an output of a production process that goes into another production process as an input. It is divided into two parts, namely, physical capital and human capital. Physical capital includes tangible resources, such as buildings, machines, tools and equipment, etc. Human capital includes knowledge and skills of human resource, which is gained by education, training and experience. Return for capital is termed as interest.
- **Enterprise:** Collecting, coordinating and utilising the factors of production for achieving economic gains is called an enterprise. An enterprise is an organization that undertakes commercial purposes or business ventures and focuses on providing goods and services. An enterprise is composed of individuals and physical assets with a common goal of generating profits. An entrepreneur is the person who creates an enterprise. The success or failure depends on the efficiency of the entrepreneur. Profit is the remuneration of the entrepreneur, which is the residual income from business after the payment of rent, wages and interest.

Q7. Define the following terms

(a) Total Production

(b) Marginal Production

(c) Average Production

Ans :

(a) Total Production (TP)

It can be defined as the total quantity of output produced by an organization for a given quantity of input. It is also known as total physical product.

(b) Marginal Production (MP)

Marginal product refers to the product obtained by increasing one unit of input. In terms of labour, the change in total quantity of product produced by including one more worker is termed as marginal product of labour. Marginal product of labour (MPL) can be calculated with the help of the following formula:

$$MPL = \Delta Q / \Delta L$$

Where, ΔQ = Change in output

ΔL = Change in labour

ΔQ = new product – old product

ΔL = new labour – old labour

(c) Average Production (AP)

It refers to the ratio of the total product to the variable input used for obtaining the total product. It is the product produced per unit of variable input employed when fixed inputs are held constant. The average product is calculated as:

Average Product = Total Product/ variable inputs employed

3.2 THEORIES OF PRODUCTION

3.2.1 Benham Theory

Q8. Explain the law of diminishing returns.

(OR)

Explain the likely behaviour of total product, average product and marginal product when only one input is increased for increasing production. Indicate the phases of Law of Variable Proportion.

(OR)

Explain the different stages of the law of variable Proportions. Which stage is important for Production.

(OR)

Explain in detail about Benham theory.

Ans : **(Nov.-21, Aug.-21, Aug.-17)**

Definitions

(i) According to G. Stigler, "As equal increments of one input are added; the inputs of other productive services being held, constant, beyond a certain point the resulting increments of the product will decrease, i.e., the marginal product will diminish."

(ii) According to F. Benham, "As the proportion of one factor in a combination of factors is increased, after a point, first the marginal and then the average product of that factor will diminish." In the words of Alfred Marshall, "An increase in the Capital and Labour applied in the cultivation of land causes, in general, less than proportionate increase in the amount of produce raised unless it happens to coincide with an improvement in the art of agriculture."

(iii) According to Richard A. Bilas, "If the input of one resource to other resources is held constant, total product (output) will increase but beyond some point, the resulting output increases will become smaller and smaller".

The law of diminishing returns is an important concept of the economic theory. This law examines the production function with one variable keeping the other factors constant. It explains that when more and more units of a variable input are employed at a given quantity of fixed inputs, the total output may initially increase at an increasing rate and then at a constant rate, and then it will eventually increase at diminishing rates. It implies that the total output initially increases with an increase in variable input at a given quantity of fixed inputs, but it starts decreasing after a point of time.

The main assumptions made under the law of diminishing returns are as follows:

- The state of technology is given and changed.
- The prices of the inputs are given.
- Labour is the variable input and capital is the constant input.
- Let us understand the law of diminishing returns with the help of an example. Suppose an organization has fixed amount of land (fixed factor) and workers (variable factor) as the labour in the short-run production. For increasing the level of production, it can hire more workers. In such a case, the production function of the organization would be as follows:

  Q = f(L), K

  Q = Total Production

  L = Labour

  K = Capital (Constant)

Table Shows the law of diminishing returns:

Table: Output-Labour Combinations

No. of Workers (L)	Total Product (TP_L)	Marginal Product (MP_L)	Average Product (AP_L)	Stages of Production (on the basis of MP_L)
1	80	80	80	Increasing returns – (Stage 1)
2	170	90	85 →	
3	270	100	90	
4	368	98	92	
5	430	62	86	Diminishing returns – (Stage 2)
6	480	50	80 →	
7	504	24	72	
8	504	0	63	Negative returns – (Stage 3)
9	495	–9	55 →	
10	470	–25	47	

From Table we can see that MP of labour rises till 3 units of labour. Beyond this point, the MP of labour starts decreasing. After using the 8 units of labour, the MP of labour starts becoming negative.

In Table, the last column shows the three stages of production, which are explained as follows:

- **Stage I: Increasing returns:** It refers to the stage of production in which the total output increases initially with the increase in the number of labour. Table shows the increase in the marginal product till the number of workers increased to 3.
- **Stage II: Diminishing returns:** It refers to the stage of production in which the total output increases, but marginal product starts declining with the increase in the number of workers. Table shows the declining of marginal product as the number of workers reaches 4.
- **Stage III: Negative returns:** It refers to the stage of production in which the total product starts declining with an increase in the number of workers. As shown in Table, the total output reaches to maximum level at the 8th worker. After that, the total output starts declining. Marginal product becomes negative at this stage. Figure shows the graphical representation of the three stages of production:

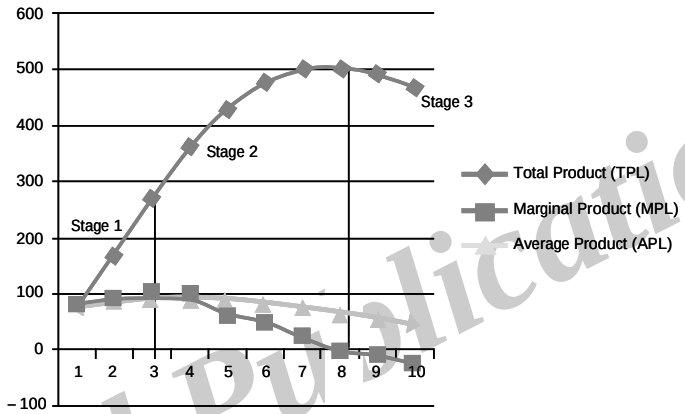


Figure: Stages of Production

From Figure, the following can be inferred:

- Stage 1: MPL > APL
- Stage 2: MPL < APL (both greater than zero)
- Stage 3: MPL < 0, APL > 0

3.2.2 Law of Two Variable Proportions

Q9. Discuss about Law of Two Variable Proportions.

Ans :

Production function indicates relationship between inputs and outputs used in producing the product. The production function explains how maximum output can be attained at given set of resources or inputs with given technology. The production function can be represented in the form of an equation as,

$Y = f(X_1, X_2 \text{ etc } ...)$

Where,

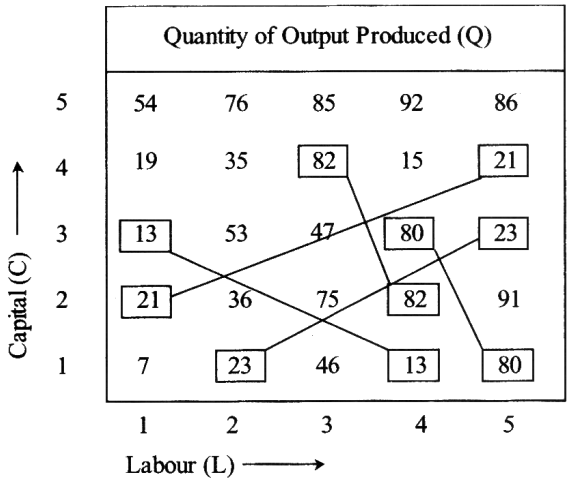
Y = Units of output

X_1 = Units of Labour

X_2 = Units of Machinery

Production function with two variable inputs is a more general case where the firm increases its output by using more of two inputs that are substitutes to each other. The two-variable input case may be taken either as a short-run or a long-run analysis of production process on the basis of the assumptions made about the nature of inputs used. If the firm utilizes only two inputs and both of them are variables, it is long-run analysis. If the firm uses more than two inputs and if only two of them are variable and others are fixed, it is the case of short-run analysis.

Production function with two-variable-inputs is illustrated as follows,



From the above table, if the firm wants to produce an output of 80 units, the input combinations (labour, capital) it can use are (3, 4) and (1,5).

Output	Combinations
82 units	(4, 3), (2, 4)
13 units	(3, 1), (1, 4)
23 units	(1, 2), (3, 5)
21 units	(2, 1), (4, 5)

If a graph is drawn by representing the different combinations of inputs used to produce the same amount of output, it is known as an 'isoquant'. A production function with two variable inputs can be represented by a family of isoquants or isoproduct curves or product indifference curves.

The production function with two variable inputs can be represented as,

Q = f(L, C)

Where,

Q – Quantity of output produced

L – Labour units

C – Capital employed.

3.3 Law of Returns to Scale

Q10. Define the law of returns to scale and explain its relevance in production management.

(OR)

Discuss the law of returns to scale with the help of a suitable example.

(OR)

What is a return to scale? Explain the concept of increasing, constant and decreasing returns to scale with graphs.

Ans : **(Aug.-21, Feb.-20, Aug.-18)**

Meaning

The law of returns to scale refers to the relationship between inputs and the output in the long-run when all the inputs (both fixed and variable) are varied in the same proportion. Economists use the phrase "Returns to Scale" to describe the behaviour in the long-run in relation to the variations in inputs.

The law of returns to scale can be defined as the percentage 'increase in the output where all the inputs vary in the same proportion.

Types

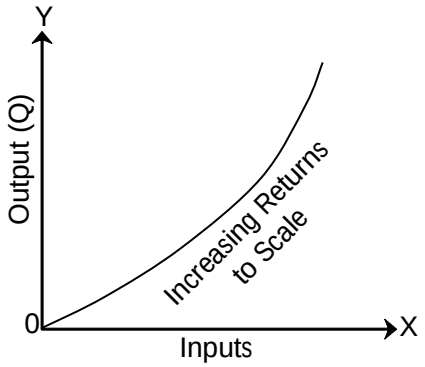
Returns to scale are of three types. They are as follows,

1. Increasing Returns to Scale

If a proportionate increase in the output is larger than the proportionate increase in inputs, then a situation of increasing returns to scale occurs. In other words, increasing returns to scale occurs when a percentage increase in inputs lead to a greater percentage increase in the output. For example if a 5%

increase in inputs result in 10% increase in the output, an organization is said to attain increased returns.

The below graph depicts a clear understanding about the behaviour of increasing returns to scale.



Generally, increasing returns to scale occur due to following reasons.

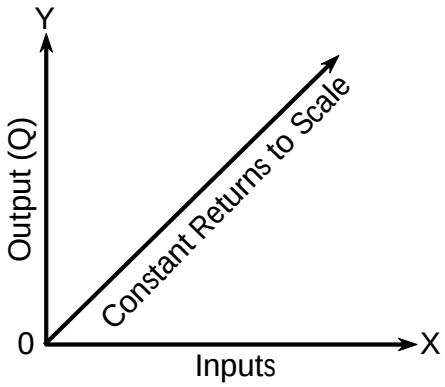
(i) In industries where the possibility to undertake production at a small scale, their a situation of increasing returns occur.

(ii) In cases where the increased size of operation gives a chance of some dimensional advantages. This is important in chemical industries and dairies where storage is an important activity.

(iii) In case of large scale industries where work is divided into fragments and as a result each individual attains specialization.

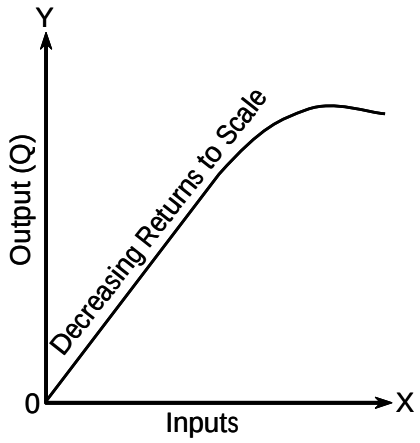
2. Constant Returns to Scale

If the proportionate increase in all the inputs is equal to the proportionate increase in output, then a situation of constant returns to scale occurs. In other words constant returns to scale occurs when the percentage increase in out-put is equal to the percentage increase in input. According to Marshall, the law of constant returns operates when the advantages and disadvantages of large scale production are exactly balanced over a range of output. For example if the inputs are increased at 10% and if the resultant output also increases at 10% then the organization is said to achieve constant returns to scale.



3. Decreasing Returns to Scale

If the proportionate increase in output is less than the proportionate increase in input, then a situation of decreasing returns to scale occurs. For example if the inputs increase by 10% and the resultant output increase by only 5% then the organization is said to achieve decreasing returns to scale. The graph below depicts decreasing returns to scale.



Decreasing returns to scale occur due to the following reasons,

(i) When a firm continues to expand its size beyond a particular point.

(ii) Increasing inefficiency in production.

(iii) After the maximum capacity of the indivisible input has reached the limit to specialization.

3.4 Cost Concepts

Q11. Explain the concept of cost.

(OR)

Define Cost.

Ans :

Introduction

For the production of commodities and services, organizations incur various expenditures on different activities, such as purchase of raw material, payment of salaries/wages to the labour and purchase or leasing machines and building. These expenditures constitute the cost borne by the organization for the production of its products and services. Inputs utilised multiplied by their respective prices, when added together constitute the money value of these inputs referred to as the cost of production. In other words, cost refers to the amount of resources required for the production of commodities and services. The resources utilised in the production would be money or money's worth usually expressed in monetary units.

Definition

According to Chartered Institute of Management Accountants, CIMA defines cost as, "the amount of expenditure (actual or notional) incurred on, or attributed to, a specified thing or activity". Cost is the expenditure, measured in monetary terms, incurred or to be incurred in order to achieve a specific objective. Cost is an important factor in business analysis and decision making especially pertaining to the following aspects:

1. Identifying the weak points in production management
2. Minimising the cost of production
3. Finding the optimum level of production
4. Estimating the cost of business operations
5. Determining the price margins for selling the goods produced.

3.4.1 Types of Costs

Q12. Explain different types of cost.

(OR)

Explain the different cost concepts used in the process of cost analysis.

(OR)

Explain the different cost concepts useful for managerial decision making.

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

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 Cost : 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 : For 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.

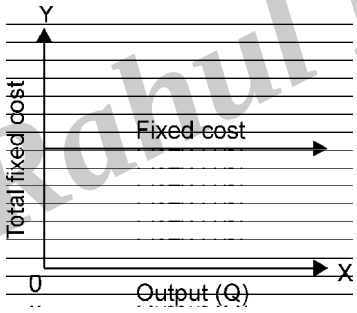
Postponable costs are those which if not incurred in time do not effect the operational efficiency of the firm. Examples are maintenance costs.

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.

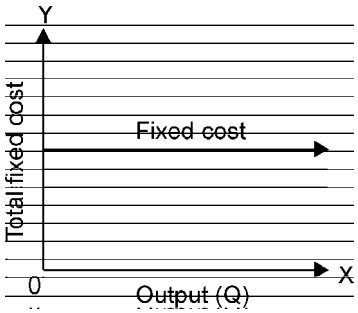
Examples : Expenditures on depreciation costs of administrative or managerial staff, rent on land and buildings, property taxes etc. Fixed cost assumes the shape as shown below,



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

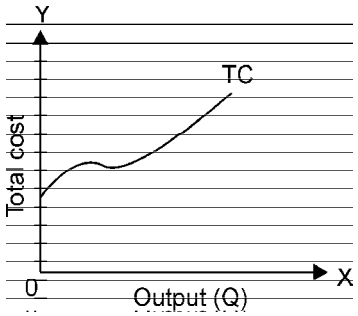
TC = VC + FC Where

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,

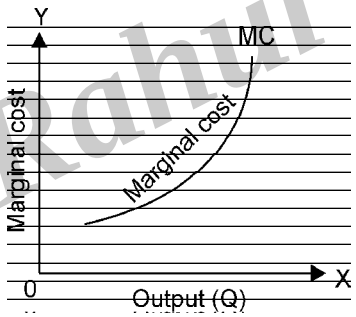
MC = Marginal cost

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,

$$AFC = \frac{TFC}{Q}$$

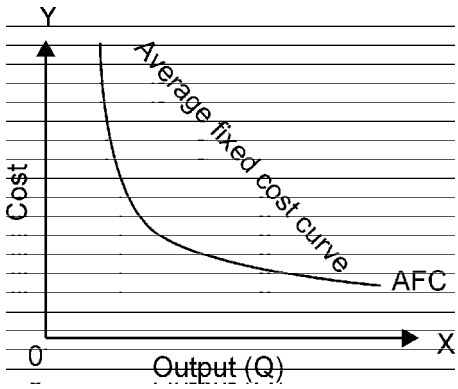
Where,

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

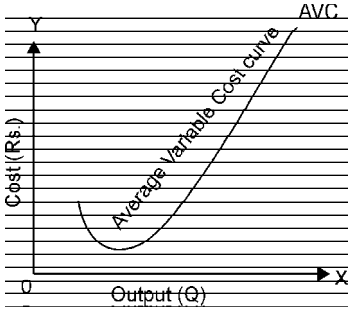
$$AVC = \frac{TVC}{Q}$$ Where,

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,

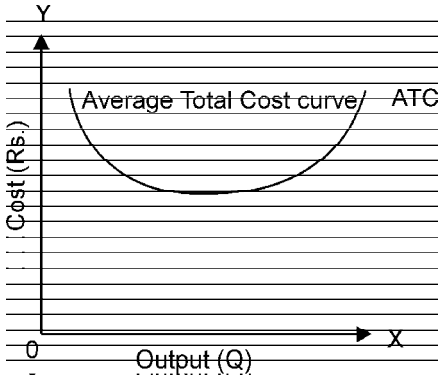
$$ATC = \frac{TFC + TVC}{Q}$$

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

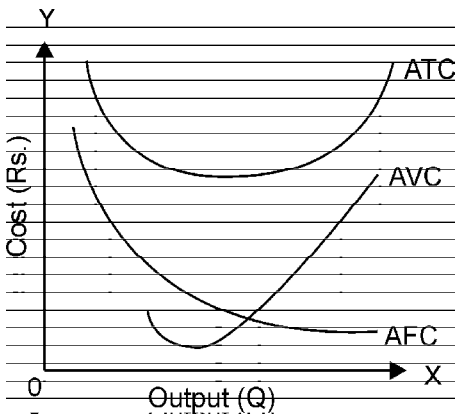
Q – Output

Relation Between ATC, AFC and AVC

$$ATC = \frac{TC}{Q}$$

$$ATC = \frac{TFC}{Q}$$

$$AVC = \frac{TVC}{Q}$$



Q13. Define cost function.

Ans :

There are a number of a determinants of costs. Some of them are identifiable in cost behaviour of a firm. Some are not.

Cost function spells out the determinants of costs. Usually, factors like the prices of inputs, the rate of output, the size of plant, and the state of technology are the major determinants of the cost of production. Hence, we may say that cost is a function of prices of inputs, the rate of output, the size of the plant and the state of technology.

In symbolic terms, the cost function may be stated thus:

$$C = f(F, O, P, T)$$

where C standards for the costs,

f denotes functional relationship

P refers to the factor input prices

0 stands for the rate of output

P refers to the size of plant and

T stands for the state of technology

Instead of such a comprehensive cost function, a simplified cost function is usually considered by economists in the theory of firm.

In economic theory, thus, a simplified cost function expresses mathematically the relationship between cost and output.

In the cost analysis, economists apply costs to the inputs in relation to the output over a period of time. Functionally, the cost behaviour, i.e., cost-output relationship, is observed in the short run as well as in the long run. We have, thus, shot-run as well as in the long run. We have, thus, short-run cost function which states cost- output relationship or the behaviour of costs under a given scale of output in the short run.

Similarly, there is the long-run cost function which states cost-output relationship or the behaviuor of costs with the chaining scale of output in the long run. The short run and long run cost functions are important for a firm to consider the price or equilibrium level of output determination.

Cost function of a firm can be expressed statistically as cost schedule or graphically in the form of a cost curve.

Q14. What are the factors affecting cost?

(OR)

Explain factors determinants of costs.

Ans :

The following are the determinants of cost:

1. **Law of Returns Operating :** An important determinant of cost is the law of returns operating. In case the law of diminishing returns the cost will show a tendency to rise; the reverse will be the case when the law of increasing returns operates.
2. **Size of the Plant :** Cost is also influenced by the size of the plant. With a bigger size, although, the initial fixed costs are high, variable costs tend to be low compared with a small sized plant.
3. **Period :** Cost behaviour is affected by the period under consideration. If we consider the short period, then cost curve will rise speedily but in case of long period cost that would not increase that speedily. In fact, a long-run cost curve is an envelope curve of several short-run cost curves.
4. **Capacity Utilisation :** Cost is also affected by the level of capacity utilisation. Especially this is the per unit fixed cost which makes a big difference; with higher capacity utilisation fixed cost per unit of output is bound to be low.
5. **Prices of Factors of Production :** The cost of the product is affected by prices of factors of production but the impact of the price of a given factor would depend upon the contribution which that factor of production makes to the total product; in other words, the relationship of the value of a given input to the total cost of the product.

6. **Technology :** Technology has also a big influence on cost of a product. In fact, most technological innovations aim at reducing costs.

7. **Efficiency in the use of Inputs :** Cost is also affected by efficiency in the use of inputs as well as choice of relatively. Cheaper inputs which are equally efficient so far as the product quality is concerned.

8. **Lot size of the Product :** Cost is also affected by the lot size of the product. If it is possible to process a bigger lot at one time the total cost of operation and thereby the unit cost will be lower compared with a process in which only smaller lot sizes are produced.

9. **Output is Stable and Constant :** Overall costs are generally lower where output is stable and constant over a period of time. Production by sudden breaks and disruption is bound to be costly.

3.4.2 Short-term and Long-term Cost Curves

Q15. Explain cost output relationship under short-run period.

Ans :

Under short run cost-output relation, labour is the variable factor while capital is the fixed factor. Total fixed cost remains constant while variable cost changes with the variation in units of labour.

Cost Output Relation Under Short-run

Output	TFC	TVC	TC	AFC	AVC	ATC	MC
0	50	0	50	-	-	-	-
1	50	25	75	50	25	75	25
2	50	45	95	25	22.5	47.5	20
3	50	60	110	16.6	20	36.6	15
4	50	75	125	12.5	18.7	31.2	15
5	50	100	150	10	20	30	25
. 6	50	145	195	8.3	24.1	32.4	45
7	50	225	275	7.1	32.1	39.2	80
8	50	355	405	6.2	44.3	50.5	130
9	50	555	605	5.5	61.6	67.1	200

From the above table the following relationship can K studied.

Average Fixed Cost and Output

The greater the output, the lower the average fixed cost per unit. The reason is that total fixed cost remains he same and do not change with a change in output. Thus he average fixed cost curve continuously falls as output increases.

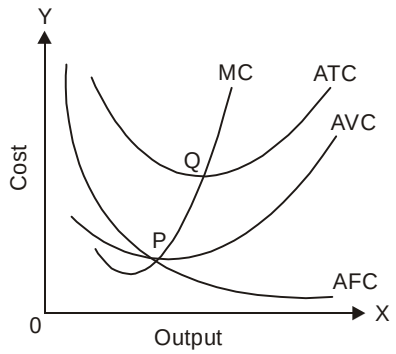


Fig. Behaviour of Costs in the Short-run

Total Variable Cost and Output

The total variable cost increases proportionately with output. However, the rate of increase is not constant.

Average Variable Cost and Output

The average variable cost will first fall and then rises as more and more units are produced in a given plant. This is because we add more units of variable factors in a fixed plant. The efficiency of the inputs first increases and then decreases. Once the optimum capacity is reached any further increase in output will increase average variable cost quite sharply.

Average Total Cost and Output

Average total cost initially declines and then rises upwards. Average total cost consists of average fixed cost plus average variable cost. Average fixed cost continues to fall with an increase in output while average variable cost first declines and then rises. So long as average variable cost declines the average total cost will also decline.

But after a point the average variable cost will rise. The average total cost will continue to decline and if the output goes on increasing the average total cost will increase.

Marginal Cost and Output

Marginal cost is the change in total cost resulting from a unit change in output.

The marginal cost decreases up to certain level of output but later it rises steeply.

In the figure it can be observed that as the output increases, average fixed cost curve (AFC) will continue to decline. And it appears to meet the X-axis but it will never meet the X-axis, because cost will never become zero at positive level of output. The average variable cost (AVC) curve looks like a U-shaped curve which tends to fall in the beginning with the increase in output but after a particular level of output, it rises upward because of the application of law of returns or law of variable proportions or law of diminishing returns.

Average Total Cost (ATC) or Average Cost (AC) is the sum of AFC and AVC. It can be seen that at lower level of output, the (AFC) is higher. Due to which (ATC) curve tends to be nearer to the AFC curve in the initial levels of output.

As the output goes on increasing, AFC will continue to decrease, the impact of AFC on ATC also will decline. Hence, the increasing output, starts increasing the distance between AFC and ATC curves.

The marginal cost curve also looks like a U-shaped curve which tends to fall in the beginning and then rises steeply. And it can also be observed that the rising marginal cost curve will interact the minimum point (i.e., at 'p') of the AVC and the minimum point (i.e., at ('Q') of the ATC curves respectively.

The interrelationship between AVC, ATC, AFC is explained as follows :

1. If both AFC, AVC fall ATC will fall.
2. If AFC falls, AVC rises, then after certain point ; ATC also rises.

Q16. Explain cost output relationship under long-run period.

Ans : **(Aug.-18)**

In the long run all factors of production are variable and there are no fixed factors. All costs are variable under long-run. There are no such fixed cost.

In order to understand the cost-output relationship in the long-run. It would be necessary to know the concept of long-run costs. The cost-output relationship is the relationship between total cost and total output.

The long-run is a period long enough to make all costs variable including such costs as are fixed in the short- run. In the short-run, variations in output are possible only within the range permitted by the existing fixed plant and equipment.

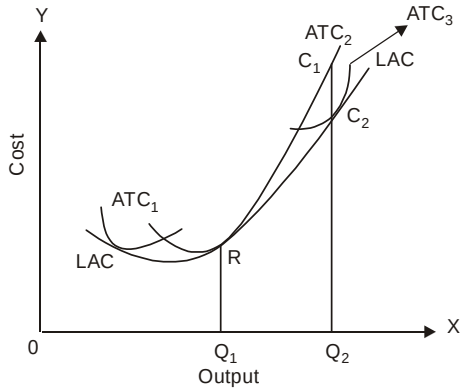


Fig. : Long-run Cost Curve

In the long run, the entrepreneur can change the size of plant, number of machines and other production facilities in order to increase output level at the least possible 1 cost. Here all costs are variable.

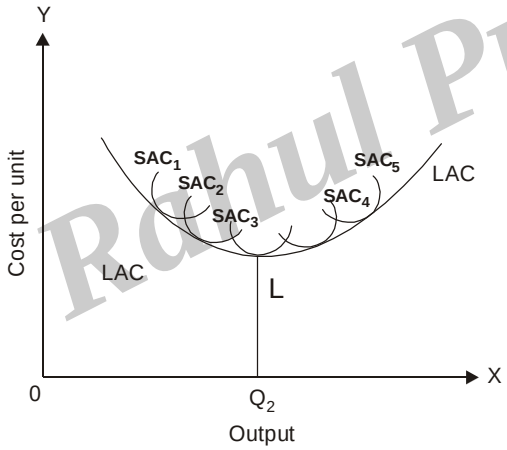


Fig. : Long-run Average Cost Curve

In view of this, the long-run costs would refer to the costs of producing different levels of output by changes in the size of plant or scale of production. The long-run cost-output relationship is shown graphically by the long-run cost-curve showing how costs would change when the scale of production is changed.

The concept of long-run costs can be understood Easily with the help of above given illustration.

Suppose, that at a particular time, a firm operates under average total cost curve ATC_2 and produces an output quantity OQ_1 Now it is desired to produce OQ_2 If the firm continues to operate under old scale (same size), its average cost will be Q_2 C_1 If the firm altered its scale then the new average total cost curve would be ATC_3 and the average cost of producing OQ_2 units would be Q_2C_2. The cost Q_2C_2 is less than Q_2 C_1. So, the new scale preferable to the old one and should be adopted.

In the long-run, the average cost of producing OQ_2 units is Q_2C_2. It may be noted here that we shall call Q,C_2 as the long-run cost only, as long as ATC_3. scale is in the planning stage and has not actually been adopted. The moment the scale is being installed, the Q_2C_2 cost would be the short-run cost of producing OQ_2 units.

To draw a long-run cost curve, we have to draw number of short run average cost curves (SAC curves), each such curve should represent a particular scale or size of ' the plant, including the optimum scale. If a curve is drawn ; tangential to all these SAC curves, so that it would touch each SAC curve at one point. Then it would be called a; long-run average cost curve(LAC).

1. The LAC curve is tangential to the various SAC curves and it is often called as the "Envelope Curve".
2. The LAC curve is U-shaped or like a 'dish'. The U shape of the LAC curve implies lower average cos in the beginning until the optimum scale of enterprise is reached. The SAC curve is also U-shaped but the difference is that LAC curve is flatter.
3. The long-run average cost curve can never cut short-run average cost curve (Since they are tangential to each other).
4. LAC curve will touch the 'optimum scale' curve ; the SAC's least-cost point i.e., L.
5. LAC curve will touch SAC curves lying to the le of the optimum scale curve at the left of their least cost points.
6. LAC curve will touch SAC curves at the right their least cost points.

A firm is not interested in achieving the minimum cost output for a given plant. It is interested in producing a given output at the minimum cost. The LAC curve helps a firm to decide the size of the plant to he adopted for producing the given output. Thus, in managerial decision-making, the usefulness of the long-run cost curve lies in its ability to assist the management in the determination of the best size of the plant to construct when a new one is being built or an old one is being expanded.

L-Shaped Long-run Average Cost Curve

A significant recent development in cost theory is that the long-run average cost curve is L-shaped rather than U-shaped. The L-shape of the long-run average cost curve implies that in the beginning when output is expanded through increase in plant size and associated variable factors, cost per unit falls rapidly due to economies of scale.

Even after a sufficiently large scale of output, the long-run average cost does not rise, it may either remain constant or it may even go on falling slightly. At a very large scale-of production, the managerial cost per unit of output may rise, but the technical or production economies more than offset the managerial diseconomies so that the total long-run average cost does not rise or may even fall continuously, though at a very small rate. Thus the empirical evidence gathered by economists in recent years does not indicate U-shaped long-run average cost curve.

Q17. Discuss briefly the forces which affect the cost behaviour in long-run.

Ans : **(Feb.-20, Jan.-19)**

1. Location

Selecting a suitable location for a site is very important for the success of new enterprise. In the selection a site, An entrepreneur needs to consider the following factors,

(a) Nearness to Market: It is not enough to successfully manufacture a product. There should also be a ready market to sell the product at a price to yield reasonable profit. Nearness to market reduces transportation cost and also minimizes wastage.

(b) Labour Supplies: The availability of adequate supply of labour is very important for the successful and uninterrupted working of a factory. This affects cost behaviour of the firm in the long run.

(c) Transportation: Transportation is one of the major factors that affects the behaviour of cost. Transportation cost will be reduced if the industry adopts a cheap and efficient means of transportation for the movement of raw materials and finished products.

(d) Nearness to Source of Operating Power: For proper functioning of a machinery, every industry requires a region that has rich fuel resources, without which it cannot develop an industrial area. Coal, oil and hydro-electricity are the various sources of power. Among these, the cheapest source of power is 'coal'. However, it is very bulky and involves high transportation costs.

(e) Availability of Raw Materials: The site should be selected in such a way that it provides an easy approach to the place of raw materials. The cost of transportation can be reduced if the raw materials are available easily.

(f) Government Policy: Nowadays, government has an important role to play in deciding the location of new industries. The various other factors which influence the decision-making with respect to industry location are cost of land, topography of the area, building for selling up the factory, possibilities of future expansion etc.

2. Scope

In long-run decisions, the company should plan the scope of activities beforehand. The following must be taken into consideration as they influence the cost behavior,

(a) What methods need to be adopted in production?

(b) What parts should be produced in the factory itself and what parts should be given to other industry for manufacturing purpose?

(c) Should the firm itself organize the marketing of product or should it depend on other agencies for marketing?

(d) Should the firm itself undertake the after-sale service to the consumers or should it enter into some agreement with other firm for this purpose?

3. Size

Size is another important factor for the success and efficiency of the firm. To ensure maximum profitability, the size of the firm must be optimum. The optimum size of the firm is that point which result in maximum efficiency and lowest production cost. It is possible to balance all the managerial and marketing factors at this optimum point of output.

3.5 LEARNING CURVE

Q18. What do you mean by learning curve? State the applications of learning curve.

Ans : **(Nov.-20, Feb.-20)**

The learning curve is an important modern concept according to which cumulative experience in the production of a product over time increases efficiency in the use of inputs such as labour and raw materials and thereby lowers cost per unit of output. K.J. Arrow, one of the pioneers in putting forward this concept calls it "Learning by doing". According to Arrow, as a firm or its manager produces successive lots of output over various periods of time, it learns to produce more with a given quantity of resources or it is capable of producing a given output by using lesser quantities of inputs or resources than before. Thus, either with the increase in efficiency of resources or with saving in resources such as labour and raw materials, cost per unit of output declines. This learning curve effect mostly occurs in the reduction of labour requirements per unit of output.

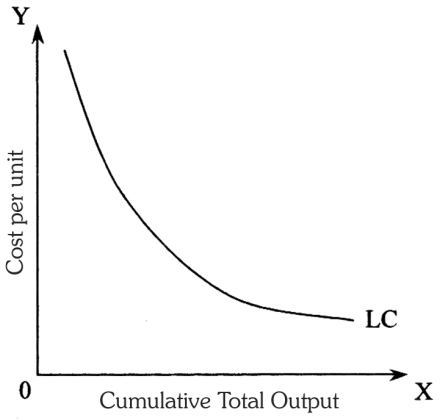


Fig. : The Learning Curve

A number of factors bring this learning curve effect. As cumulative volume of output over successive periods of time increases, labour and supervisors become more familiar with the work methods or the production process, which leads to the reduction in the amount of scrap and other types of wastes. Besides, raw materials cost per unit of output may also decline as cumulative volume of output is successive periods over time increases and as a result a firm gains more experience in doing a production process repeatedly over successive time periods. The learning curve is graphically shown in figure where on the X-axis cumulative total output over successive periods of time and on the Y-axis cost per unit of output are measured. It will be seen that the learning curve shapes downward which shows declining cost per unit of output as cumulative output increases over time and the firm learns from its work experience.

Applications

The usefulness of Learning Curve can be understood from the following points,

1. Most of the organizations make use of learning curve as planning and forecasting tools.
2. Learning Curve helps in improving organizational performance.
3. It is also used for planning and managing the firm's internal operations such as for planning the production schedules, planning for

training, setting labour standards, making commitments related to delivery, making decisions regarding sub contracting, determining manufacturing strategy etc.

4. It is useful in making strategic decisions regarding their behavior with other firms. Based on Learning Curves, firm uses forecasts as to predict the competitor costs.

3.6 Iso-cost Curve

Q19. Explain the concept of Isocost.

Ans :

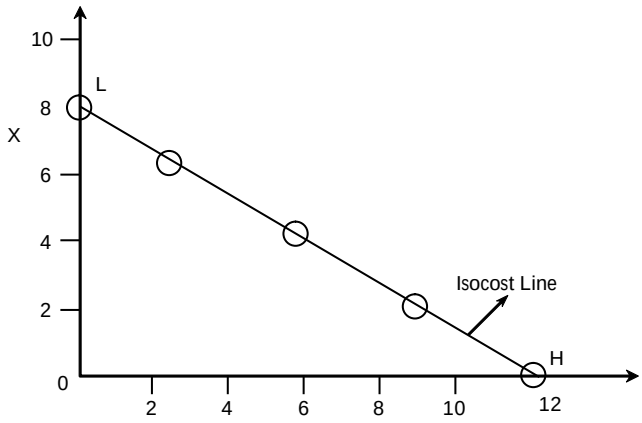
Iso-cost curve is the locus of points of all different combinations of labour and capital that an organization can employ, given the price of these inputs. Iso-cost line represents the price of factors along with the amount of money an organization is willing to spend on factors. In other words, it shows different combinations of factors that can be purchased at a certain amount of money. The slope of the iso-cost line depends upon the ratio of price of labour to the price of capital.

For example, a producer has a total budget of `120, which he wants to spend on the factors of production, namely, X and Y. The price of X in the market is `15 per unit and the price of Y is `10 per unit. Table depicts the combinations:

Table: Combinat ions of X and Y

Combinations	Units of X	Units of Y	Total expenditure
A	8	0	120
B	6	3	120
C	4	6	120
D	2	9	120
E	0	12	120

The iso-cost line is shown in Figure:



As shown in Figure, if the producer spends the whole amount of money to purchase X, then he/she can purchase 8 units of X. On the other hand, if the producer purchases Y with the whole amount, then he/she would be able to get 12 units. If points H and L are joined on X and Y axes, respectively, then a straight line is obtained, which is called iso-cost line. All the combinations of X and Y that lie on this line, would have the same amount of cost that is ‘120. Similarly, other iso-cost lines can be plotted by taking

cost more than '120, in case the producer is willing to spend more amount of money on the production factors.

With the help of isoquant and iso-cost lines, a producer can determine the point at which inputs yield maximum profit by incurring minimum cost. Such a point is termed as producer's equilibrium.

Q20. Explain the concept of Isoquants curves.

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

Meaning

A technical relation that shows how inputs are converted into output is depicted by an isoquant curve. It shows the optimum combinations of factor inputs with the help of prices of factor inputs and their quantities that are used to produce the same output. The term ISO implies equal and quant means quantity or output. For example, for producing 100 calendars, 90 units of capital and 10 units of labour are used. Isoquant curves are also called as equal product curves or production indifference curves.

Definitions

(i) **According to Ferguson,** "An isoquant is a curve showing all possible combinations of inputs physically capable of producing a given level of output."

(ii) **According to Peterson,** "An isoquant 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."

The assumptions of an isoquant curve are as follows:

- There are only two factor inputs, labour and capital, to produce a particular product.
- Capital, labour and goods are divisible in nature.
- Capital and labour are able to substitute each other up to a certain limit.
- Technology of production is given over a period of time.
- Factors of production are used with full efficiency.

Let us learn isoquant with the help of the following table.

Table shows the different combinations of two factor inputs, namely, labour and capital for producing 150 tonnes of output:

Table : Combinat ions of two factor inputs

Labour	Capital
6	40
7	28
8	18
9	12
10	8

Figure shows the isoquant curve of different labour capital combinations that help in producing 150 tonnes of output**:**

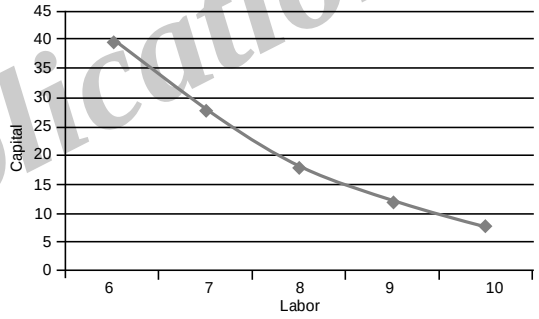


Figure: Isoquant Curve

Some of the properties of the isoquant curves are as follows:

- **Isoquant curves slope downwards**

  It implies that the slope of the isoquant curve is negative. This is because when capital (K) is increased, the quantity of labour (L) is reduced or vice versa, to keep the same level of output.

- **Isoquant curves are convex to origin**

  It implies that factor inputs are not perfect substitutes. This property shows the substitution of inputs and diminishing marginal rate of technical substitution of isoquant. The marginal significance of one input (capital) in terms of another input (labour) diminishes along with the isoquant curve.

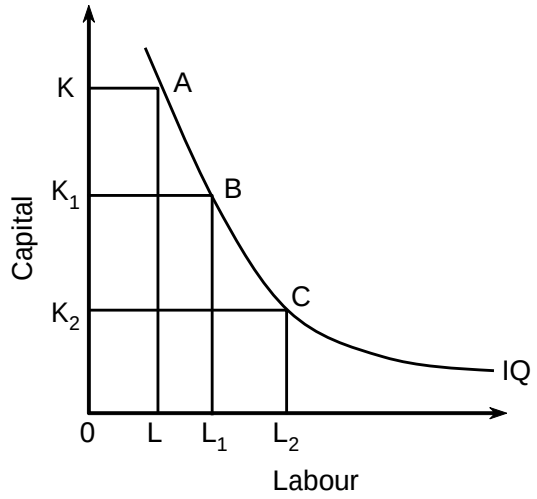


Fig.: Shows the convex isoquant curve

The convexity represents that the MRTS diminishes if we move from point A to B and from B to C along the isoquant. The MRTS diminishes because the two inputs labour and capital are not perfect substitutes.

Thus, for every increase in labour, there is a decrease in capital.

If isoquant is concave, the MRTS of labour for capital increases.

Figure shows the concave isoquant curve:

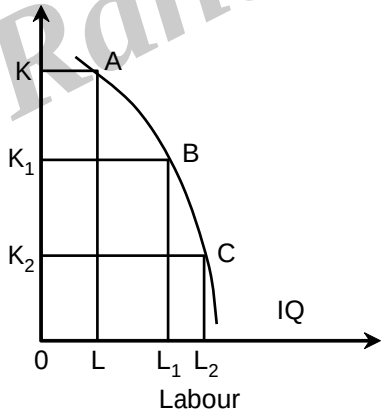


Fig.: Convex isoquant curve

As shown in Figure, if we move from point A to B and from B to C along the isoquant, the MRTS increases. It shows that the two inputs labour and capital are perfect substitutes. Thus, for every increase in labour, there is an increase in capital.

- **Isoquant curves cannot intersect each other**

  An isoquant implies the different levels of combination producing different levels of in puts. If the isoquants intersect each other, it would imply that a single input combination can produce two levels of output, which is not possible. The law of production would fail to be applicable.

- **The higher the isoquant the higher the output**

  It implies that the higher isoquant represents higher output. The upper curve of the isoquant produces more output than the curve beneath. This is because the larger combination of input results in a larger output as compared to the curve that is beneath it.

3.7 BEP Analysis

Q21. Define break-even analysis. State the key terms used in break-even analysis.

Ans : **(Imp.)**

Break-even analysis refers to analysis of the break-even point (BEP). The BEP is defined as a no-profit or no-loss point. In other words, it points out how much minimum is to be produced to see the profits. It is a technique for profit planning and control, and therefore is considered a valuable managerial tool.

Break-even analysis is defined as analysis of costs and their possible impact or revenues and volume of the firm. Hence, it is also called the cost-volume-profit analysis. A firm is said to attain the BEP when its total revenue is equal to total cost (TR = TC).

Total cost comprises fixed cost and variable cost. The significant variables on which the BEP is based are fixed cost, variable cost and total revenue.

Key Terms

(a) Fixed cost : Fixed costs remain fixed in the short-run. Examples are rent, insurance, depreciation, factory supervisor's salaries, directors' salaries, and so on.

(b) Variable costs : The variable cost per unit vary wit the volume of production. The variable costs include cost of direct materials, direct labour, direct expenses, operating supplies such as lubricating oil, and so on.

(c) Total cost : The total of fixed and variable costs.

(d) Total revenue : The sales proceeds (selling price per unit × number of units sold)

(e) Contribution margin : The contribution margin is the difference between the selling price per unit and the variable cost per unit. It is also determined as (fixed cost per unit + profit per unit)

(f) Profit = Contribution – Fixed cost

(g) Contribution margin ratio : It is the ratio between contribution per unit and the selling price per unit.

(h) Margin of safety in units : The excess of actual sales (in units) minus the break-even point (in units)

(i) Margin of safety in sales volume : The excess of actual sales (in rupees) minus the break-even point (in rupees)

(j) Angle of incidence : The angle formed where total cost curve cuts the total revenue curve (see the BEP chart in figure).

(k) P/V ratio : The ratio between the contribution and sales.

Determination of Break-even Point

The following are the key terms used in determination of break-even point :

Selling price = Fixed cost + Variable cost + Profit

Selling price – Variable cost = Fixed cost + Profit

= Contribution

Contribution per unit = Selling price per unit – Variable cost per unit

Having studied the nature of fixed and variable costs in the earlier, we will now discuss how to determine break-even point.

i) Determination of Break-even Point in Units :

$$\text{Break-even point} = \frac{\text{Fixed costs}}{\text{Contribution margin per unit}}$$

Where contribution marging per unit = (Selling price per unit – Variable cost per unit)

ii) Determination of BEP in value :

$$\text{BEP} = \frac{\text{Fixed costs}}{\text{Contribution margin ratio}}$$

Where contribution margin ratio is the ratio of contribution margin per unit to selling price per unit.

The answers can be verified by using the following formula :

Sales = BEP sales + Margin of safety

Graphical Representation of Break-even Point (BEP)

From the fig. we understand :

i) TC = Total Variable Cost (TVC) + Total Fixed Cost + (TFC)

ii) The variable cost line is drawn first. It varies proportionately with volume of production and sales.

iii) The total cost line is derived by adding total fixed costs line to the total variable cost line. The total cost line is parallel to variable cost line.

iv) The total revenue line starts from 0 point and increase along with volume of sales intersecting total cost line at point BEP.

v) The zone below BEP is loss zone and the zone above BEP is profit zone.

vi) OP is the quantity produced/sold at OC the cost/price at BEP.

vii) The angle formed at BEP, that is, the point of intersection of total Revenue and total cost is called angle of incidence.

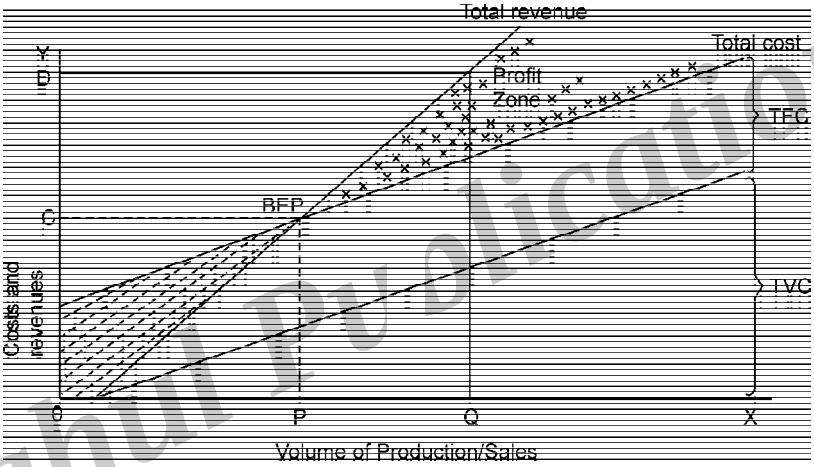


Fig.: Graphical Representation of Break-even Point

viii) The larger the angle of incidence, the higher is the quantum of profit once the fixed costs are absorbed.

ix) Margin of safety refers to the excess of production or sales over and the BEP of production/sales. The margin of safety is OQ minimum OP. The sales value at OQ is OD. It can be observed that the firm reaches break even point at point BEP. At BEP, the total cost is equal to total revenue. OP is the volume of production/sales at the cost/revenue of OC. The zone below BEP is called loss zone and zone above BEP is called profit zone. Total cost curve is based on the total of fixed cost and variable cost.

Different Formulae Used in Break-even Analysis and their Applications

The following are the variations of the formula of break-even analysis :

1. Profit-volume (P/V) ratio = (Contribution/Sales). If multiplied by 100, it can be expressed in terms of percentage.

This has been derived from the following basic formula :

$$\frac{\text{Fixed cost} \times \text{Sales}}{\text{Sales} - \text{Variable cost}} \text{ or } \frac{\text{Fixed cost}}{\text{P/V ratio}}$$

2. Margin of safety can be determined by the following formula :

$$\text{Margin of safety} = \frac{\text{Profit}}{\text{P/V ratio}}$$

3. To ascertain the volume of sales required to achieve a targeted amount of profit :

Volume of sales to attain a targeted profit

$$= \frac{\text{Fixed costs + Targeted profit}}{\text{Contribution margin}}$$

Q22. Explain the significance of break-even analysis.

Ans :

Break-even analysis is a valuable tool

- to ascertain the profit on a particular level of sales volume or a given capacity of production.
- to calculate sales required to earn a particular desired level of profit.
- to compare the product lines, sales area, methods of sale for individual company.
- to compare the efficiency of the different firms.
- to decide whether to add a particular product to the existing product linear or drop one from it to decide to 'make or buy' a given component or spare part.
- to decide what promotion mix will yield optimum sales.
- to assess the impact of changes in fixed cost, variable cost or selling price on BEP and profits during a given period.

Q23. State the assumptions of BEP.

Ans :

The following are the assumptions underlying break-even analysis:

a) Costs can perfectly be classified into fixed and variable costs.

b) Selling price does not change with volume changes. It remains fixed. It does not consider the price discounts or cash discounts.

c) All the goods produced are sold. There is no closing stock.

d) There is only one product available for sale. In case of multi-product firms, the product mix does not change.

Q24. Explain the limitations of break-even analysis.

Ans :

Break-even analysis has certain underlying assumptions which form its limitations.

1. Break-even point is based on fixed cost, variable cost and total revenue. A change in one variable is going to affect the BEP.
2. All costs cannot be classified into fixed and variable costs. We have semi-variable cost also.
3. In case of multi-product firm, a single chart cannot be of any use. Series of charts have to be made use of.

4. It is based on fixed cost concept and hence holds good only in the short-run.

5. Total cost and total revenue lines are not always straight as shown in the figure. The quantity and price discounts are the usual phenomena affecting the total revenue line.

6. Where the business conditions are volatile, BEP cannot give stable results.

The above limitations do not deter the utility of break-even analysis. Even today, the business proposals are evaluated on the concept of BEP. The project is chosen if the BEP is lower. Similarly, the bankers and other financial agencies excessively rely up on the BEP of the bornover.

If the BEP is lower, only then borrower is favoured. In other words, the break-even analysis continues to be practical tool for the business community.

PROBLEMS

1. From the following information, calculate the break-even point in units and in sales value.

Output = 30,000 Units

Selling price per unit = Rs. 30

Variable cost per unit = Rs. 20

Total Fixed cost = Rs. 20,000

Sol :

Break – even point (in units)

$$= \frac{\text{Fixed cost}}{\text{selling price per unit - variable cost per unit}}$$

$$= \frac{20,000}{30 - 20}$$

$$= \frac{20,000}{10}$$

$\therefore$ BEP in units = 2,000 Units.

Calculation of BEP (in Rs.)

$$\text{BEP (in Rs)} = \frac{\text{Fixed cost} \times \text{Selling price per unit}}{\text{Contribution per unit}}$$

$$= \frac{20,000 \times 30}{10} = 60,000$$

$\therefore$ BEP (in Rs.) = Rs. 60,000

2. The following information is provided to you:

Selling price per unit ` 40-00

Variable cost per unit ` 24-00

Fixed cost per unit ` 6-00

Profit per unit ` 10-00

Present sales volume is 2,000 units

You are required to calculate:

(i) P/v Ratio

(ii) Break-Even Point

(iii) Margin of Safety

(iv) Sales required to earn a profit of ` 26,000.

Sol :

Contribution (per unit) = Selling price (per unit) – Variable cost (per unit) = 40 – 24 = 16

(or)

Contribution = Fixed cost + Profit = 6 + 10 = 16

Contribution = ` 16

(i) P/V Ratio

$$\text{P/V ratio} = \frac{\text{Contribution Per Unit}}{\text{Selling Price Per Unit}} \times 100$$

$$= \frac{16}{40} \times 100 = 40\%$$

(ii) Break-Even Point

Break even point (in units)

$$= \frac{\text{Fixed costs}}{\text{Contribution per unit}}$$

Fixed costs = ` 6 × 2000 = 12000

$$\text{B.E.P} = \frac{12000}{16} = 750$$

B.E.P (in `) = B.E.P (in units) × S.P

= 750 × 40 = 30.000

(iii) Margin of Safety

$$\text{MOS} = \frac{\text{Profit}}{\text{P/V ratio}} = \frac{10}{0.40} = 25$$

= MOS × Sales Volume (units)

= 25 × 2000 = 50,000

(or)

MOS = Actual sales – Break even sales

= (40 × 2000) – (30,000)

= 80,000 – 30,000

= 50,000

(iv) Sales Required to Earn a Profit of ` 26,000

$$\text{Required sales} = \frac{\text{Fixed cost + Desired profit}}{\text{P/V ratio}}$$

$$= \frac{(6 \times 2000) + 26,000}{40}$$

$$= \frac{12,000 + 26,000}{40}$$

$$= \frac{38,000}{40}$$

= 950 units.

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3. From the following information find.

i) P/V Ratio

ii) Break even point

iii) Required sales for earning profit of Rs. 50,000

Sales = Rs. 2,00,000; variable cost Rs. 1,00,000 and fixed cost Rs. 30,000.

Sol :

(i) Calculation of P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{sales}} \times 100$$

$$\text{(or)} \ \frac{\text{Sales} - \text{variable cost}}{\text{sales}} \times 100$$

$$= \frac{2,00,000 - 1,00,000}{2,00,000} \times 100$$

$$= \frac{1,00,000}{2,00,000} \times 100 = 50\%$$

(ii) Calculation of BEP

$$= \frac{\text{Fixed cost}}{\text{P/V ratio}} = \frac{30,000}{50\%}$$

$$= 30,000 \times \frac{100}{50} = 60,000 \text{ (`)}$$

(iii) Calculation of required sales for a profit of Rs. 50,000.

Required sales

$$= \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/v Ratio}}$$

$$= \frac{30,000 + 50,000}{50\%} = \frac{80,000}{0.5}$$

$$= 1,60,000$$

$\therefore$ Required sales = Rs. 1,60,000.

4. Sales = Rs. 1,00,000 ; Profit Rs. 10,000 ; Variable cost = 70% of sales.

Find out

(i) P/v Ratio

(ii) Fixed cost

(iii) Sales volume to earn a profit of Rs. 40,000

Sol :

Variable cost is = 70% of sales.

$\therefore$ Variable cost = $1,00,000 \times \frac{70}{100}$ = Rs. 70,000

Calculation of Contribution

Contribution = Sales – Variable cost

= 1,00,000 – 70,000

Contribution = 30,000

(i) Calculation of P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{30,000}{1,00,000} \times 100 = 30\%$$

(ii) Calculation of fixed cost

Contribution = Fixed cost + profit

30,000 = FC + 10,000

FC = 30,000 – 10,000

∴ Fixed cost = 20,000

(iii) Calculation of sales volume to earn a profit of Rs. 40,000

$$\text{Sales volume} = \frac{\text{Fixed cost + Desired profit}}{\text{P/V Ratio}}$$

$$= \frac{20,000 + 40,000}{30\%}$$

$$= \frac{60,000}{0.3}$$

∴ Sales volume = 2,00,000.

5. From the following data, you are required to calculate.

a) P/V Ratio

b) Break – even sales with the help of P/v Ratio.

c) Sales required to earn a profit of Rs. 4,50,000

Fixed Expenses = Rs. 90,000

Variable cost per unit

Direct material = Rs. 5

Direct Labour = Rs. 2

Direct overheads = 100% of Direct labour

Selling price per unit = Rs. 12.

Sol :

Calculation of contribution per unit

Particulars	Rs.	Rs.
Selling price per unit		Rs. 12
Less : Variable cost per unit		
Direct material	5 = 00	
Direct Labour	2 = 00	
Direct over heads $\left(2 \times \frac{100}{100}\right)$	2 = 00	Rs. 9
Contribution per unit		3

(a) Calculation of P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{3}{12} \times 100 = 25\%.$$

(b) Calculation of Break – even sales with the help of P/V Ratio.

$$\text{BEP (in Rs)} = \frac{\text{Fixed cost}}{\text{P/V Ratio}} = \frac{90,000}{25/100} = \frac{90,000}{0.25}$$

BEP (in Rs.) = 3,60,000

(c) Sales required to earn a profit of Rs. 4,50,000

$$\text{Required sales} = \frac{\text{Fixed cost + Desired profit}}{\text{P/V Ratio}}$$

$$= \frac{90,000+4,50,000}{25/100} = \frac{5,40,000}{0.25}$$

∴ Required sales = 21,60,000.

6. From the following information you are required to calculate

i) BEP (sales)

ii) Profit when sales are Rs. 46,000.

iii) Sales when profit is Rs. 5,000.

Particulars	1990	1991
Sales	38,000	65,000
Profit	–2,400	3,000

Sol :

(i) Calculation of P/V Ratio

$$\text{P/V Ratio} = \frac{\text{Difference in profit}}{\text{Difference in sales}} \times 100$$

$$= \frac{5,400}{27,000} \times 100 = 20\%$$

Working Notes :

i) Calculation of contribution.

Contribution = Sales × P/V Ratio

$$\text{1990 Contribution} = 38,000 \times \frac{20}{100} = 7,600$$

1991 Contribution = $65,000 \times \frac{20}{100} = 13,000$

ii) Calculation of fixed cost

Contribution = Fixed cost + profit

1990 $\rightarrow$ 13,000 = FC + 3,000

FC = 13,000 – 3,000

$\therefore$ FC = 10,000

iii) Calculation of Break even point

$$BEP = \frac{\text{Fixed cost}}{\text{P/V Ratio}}$$

$$= \frac{10,000}{20/100}$$

$$= \frac{10,000}{0.2}$$

BEP = 50,000

iv) Profit when sales are 46,000

$$\text{Sales} = \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/V Ratio}}$$

$$46,000 = \frac{10,000 + \text{Desired profit}}{0.2}$$

46,000 × 0.2 = 10,000 Desired profit

9,200 = 10,000 DP

DP = 9,200 – 10,000

$\therefore$ loss = 800

v) Sales when profit = 5,000

$$\text{Sales} = \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/V Ratio}}$$

$$\text{Sales} = \frac{10,000 + 5,000}{0.2}$$

0.2 sales = 15,000

$$\text{Sales} = \frac{15,000}{0.2}$$

Sales = 75,000.

Short Question and Answers

1. Explain the concept of Isoquants curves.

Ans :

Meaning

A technical relation that shows how inputs are converted into output is depicted by an isoquant curve. It shows the optimum combinations of factor inputs with the help of prices of factor inputs and their quantities that are used to produce the same output. The term ISO implies equal and quant means quantity or output. For example, for producing 100 calendars, 90 units of capital and 10 units of labour are used. Isoquant curves are also called as equal product curves or production indifference curves.

Definitions

(i) **According to Ferguson,** "An isoquant is a curve showing all possible combinations of inputs physically capable of producing a given level of output."

(ii) **According to Peterson,** "An isoquant 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."

2. Learning curve.

Ans :

The learning curve is an important modern concept according to which cumulative experience in the production of a product over time increases efficiency in the use of inputs such as labour and raw materials and thereby lowers cost per unit of output. K.J. Arrow, one of the pioneers in putting forward this concept calls it "Learning by doing". According to Arrow, as a firm or its manager produces successive lots of output over various periods of time, it learns to produce more with a given quantity of resources or it is capable of producing a given output by using lesser quantities of inputs or resources than before. Thus, either with the increase in efficiency of resources or with saving in resources such as labour and raw materials, cost per unit of output declines.

3. Explain Cobb Douglas production function

Ans :

A very popular production function which deserves special mention is the Cobb-Douglas function. It relates output in American manufacturing industries from 1899 to 1922 to labour and capital inputs, taking the form :

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

Where

P = Total output

L = Index of employment of labhour in manufacturing and

C = Index of fixed capital in manufacturing

The exponents a and 1 – a are the elasticitics of production that is, a and 1 – a measure the percentage response of output to percentage changes in labour and capital respectively. The function estimated for the U.S.A. by Cobb and douglas is:

$$P = 1.01\ L^{.75} - C^{.25},\ R^2 = 0.9409$$

The production function shows that a 1 per cent changes in labour input, capital remaining constant, is associated with a 0.75 per cent change in output. Similarly, a 1 per cent change in capital labour remaining constant, is associated with a 0.25 per cent change in output. The coefficient of determination (R^2) means that 94 per cent of the variations on the dependent variable (P) were accounted for by the variations in the independent variables (L and C).

4. Returns to scale

Ans :

Meaning

The law of returns to scale refers to the relationship between inputs and the output in the long-run when all the inputs (both fixed and variable) are varied in the same proportion.

Economists use the phrase "Returns to Scale" to describe the behaviour in the long-run in relation to the variations in inputs.

The law of returns to scale can be defined as the percentage 'increase in the output where all the inputs vary in the same proportion.

5. Define production function.

Ans :

Definitions

Production function can be defined as a technological relationship between the physical inputs and physical output of the organization.

(i) **According to Stigler,** "production function is the name given to the relationship between the rates of input of productive services and the rate of output…"

(ii) **According to Samuelson,** "Production Function is the technological relationship, which explains the quantity of production that can be produced by a certain group of inputs. It is related with a given state of technological change."

(iii) **According to In the words of Watson,** "The relation between a firm's physical production (output) and the material factors of production (input) is referred to as production function."

Inputs include the factors of production, such as land, labour, capital, whereas physical output includes quantities of finished products produced. The long-run production function (Q) is usually expressed as follows:

$$Q = f(LB, L, K, M, T, t)$$

Where,

LB = land and building

L = labour

K = capital

M = raw material

T = technology

t = time

6. Define Production.

Ans :

Meaning

Production can be defined as the process of converting the inputs into outputs. Inputs include land, labour and capital, whereas output includes finished goods and services. In other words, production is an act of creating value that satisfies the wants of the individuals.

Organizations engage in production for earning maximum profit, which is the difference between the cost and revenue. Therefore, their production decisions depend on the cost and revenue. The main aim of production is to produce maximum output with given inputs.

Definitions

(i) **According to James Bates and J.R. Parkinson,** "Production can be defined as an organized activity of transforming physical inputs (resources) into outputs (finished products), which will satisfy the products' needs of the society."

(ii) **According to J.R. Hicks,** "Production is an activity whether physical or mental, which is directed to the satisfaction of other people's wants through exchange."

7. Explain CES production function.

Ans :

In Constant Elasticity of Substitution (CES) production function, the elasticity of substitution is not equal to unity, it is rather constant. Below is a general form of CES production function,

$$X = \gamma[KC^{-\alpha} + (1-K)L^{-\alpha}]^{\frac{-v}{\alpha}}$$

Where,

X = Output

C = Capital

L = Labour

The above function is constrained by

$\gamma > 0, 0 < W, \propto - I.$

The three variables in the function are X, C and L and the four parameters are y, K, x and v.

(a) γ parameter is used to measure efficiency and the more the value of y, the more will be the output.

(b) AT is a distribution parameter or the capital intensity factor coefficient and (1 – K) denotes the labour intensity coefficient.

(c) v denotes the degree of returns to scale. Using the substitution parameter oc, we can derive elasticity of substitution (σ).

$$\propto = \left[1 = \frac{1}{\sigma}\right]$$

8. Define Cost.

Ans :

Introduction

For the production of commodities and services, organizations incur various expenditures on different activities, such as purchase of raw material, payment of salaries/wages to the labour and purchase or leasing machines and building. These expenditures constitute the cost borne by the organization for the production of its products and services. Inputs utilised multiplied by their respective prices, when added together constitute the money value of these inputs referred to as the cost of production. In other words, cost refers to the amount of resources required for the production of commodities and services. The resources utilised in the production would be money or money's worth usually expressed in monetary units.

Definition

According to Chartered Institute of Management Accountants, CIMA defines cost as, "the amount of expenditure (actual or notional) incurred on, or attributed to, a specified thing or activity". Cost is the expenditure, measured in monetary terms, incurred or to be incurred in order to achieve a specific objective. Cost is an important factor in business analysis and decision making especially pertaining to the following aspects:

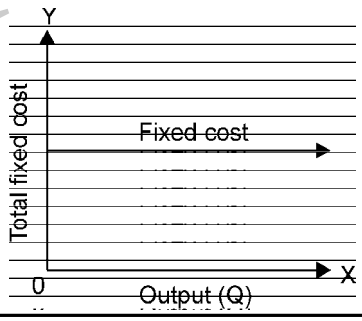
1. Identifying the weak points in production management
2. Minimising the cost of production
3. Finding the optimum level of production
4. Estimating the cost of business operations
5. Determining the price margins for selling the goods produced.

9. 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,



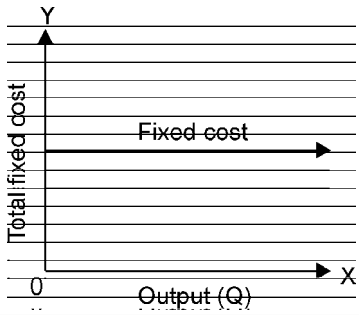
10. Variable Costs

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.



11. Define cost function.

Ans :

There are a number of a determinants of costs. Some of them are identifiable in cost behaviour of a firm. Some are not.

Cost function spells out the determinants of costs. Usually, factors like the prices of inputs, the rate of output, the size of plant, and the state of technology are the major determinants of the cost of production. Hence, we may say that cost is a function of prices of inputs, the rate of output, the size of the plant and the state of technology.

In symbolic terms, the cost function may be stated thus:

C = f (F, O, P, T)

where C standards for the costs,

f denotes functional relationship

P refers to the factor input prices

0 stands for the rate of output

P refers to the size of plant and

T stands for the state of technology

12. Define break-even analysis.

Ans :

Break-even analysis refers to analysis of the break-even point (BEP). The BEP is defined as a no-profit or no-loss point. In other words, it points out how much minimum is to be produced to see the profits. It is a technique for profit planning and control, and therefore is considered a valuable managerial tool.

Break-even analysis is defined as analysis of costs and their possible impact or revenues and volume of the firm. Hence, it is also called the cost-volume-profit analysis. A firm is said to attain the BEP when its total revenue is equal to total cost (TR = TC).

Total cost comprises fixed cost and variable cost. The significant variables on which the BEP is based are fixed cost, variable cost and total revenue.

13. Explain the significance of break-even analysis.

Ans :

Break-even analysis is a valuable tool

- to ascertain the profit on a particular level of sales volume or a given capacity of production.
- to calculate sales required to earn a particular desired level of profit.
- to compare the product lines, sales area, methods of sale for individual company.
- to compare the efficiency of the different firms.
- to decide whether to add a particular product to the existing product linear or drop one from it to decide to 'make or buy' a given component or spare part.
- to decide what promotion mix will yield optimum sales.
- to assess the impact of changes in fixed cost, variable cost or selling price on BEP and profits during a given period.

14. State the assumptions of BEP.

Ans :

The following are the assumptions underlying break-even analysis:

a) Costs can perfectly be classified into fixed and variable costs.

b) Selling price does not change with volume changes. It remains fixed. It does not consider the price discounts or cash discounts.

c) All the goods produced are sold. There is no closing stock.

d) There is only one product available for sale. In case of multi-product firms, the product mix does not change.

Choose the Correct Answers

1. With which of the following is the production function more concerned ? [c]
   (a) Financial aspects (b) Technological aspects
   (c) Physical aspects (d) Economic aspects
2. In the production function, at any given time, the output from a given set of inputs is. [a]
   (a) Always fixed (b) Always variable
   (c) Semi-fixed (d) Semi-variable
3. Which of the following is defined at a given stage of technical knowledge? [b]
   (a) Theory of Production (b) Production Function
   (c) Law of Diminishing Returns (d) Law of Constant Returns
4. The Production Function is also known as. [c]
   (a) Output-costs relationship (b) Input-costs relationship
   (c) Input-output relationship (d) Output-input relationship
5. The Law of Returns is also called. [b]
   (a) Law of Fixed Proportions (b) Law of Variable Proportions
   (c) Law of Constant Returns (d) Law of Increasing Returns
6. The Law of Returns states that when at least one factor of production is fixed and when others are varied, the total output in the initial stages will _____ at an increasing rate, and after reaching certain level of output, the total output will _____ at declining rate. [d]
   (a) Increase, decrease (b) Decrease, increase
   (c) Decrease, decrease (d) Increase, increase
7. Isoquants are also called [a]
   (a) Isoproduct curves (b) Isocost curves
   (c) Price indifference curve (d) Indifference curve
8. Which of the following represents all such combinations that yield equal quantity of output. [c]
   (a) Isoprice curve (b) Isocost curve
   (c) Isoquant curve (d) Indifference curve
9. Which of the following represent the combination of inputs that will cost the producer the same amout of money ? [c]
   (a) Isoquants (b) Isoproducts
   (c) Isocosts (d) Isoprices
10. If the level of production changes, the total cost changes and thus the isocost curve. [b]
    (a) Moves downwards (b) Moves upwards
    (c) Moves in a linear fashion (d) Moves in a haphazard manner

Fill in the Blanks

1. Production function reveals _____ relationship that reveals the maximum amount of output possible from each set of inputs.
2. The quantities of output throughout a given _____ are equal.
3. The product indifference curve is also called _____.
4. The fact that the isoproduct curve is convex to the origin reveals that the input factors are not _____.
5. L-shaped isocost denotes _____ coefficients of production.
6. The rate at which one input factor is substituted with the other to attain a given level of output is called _____.
7. Returns to scale are also called _____.
8. The ratio of input to output is called _____.
9. The additional output for a given additional unit of input is called _____.
10. The economies that accrue to all the firms in an industrial estate are called _____.

ANSWERS

1. Technological
2. Isoproduct or isoquant
3. Isoproduct of isoquants
4. Perfect substitutes
5. Fixed
6. Marginal Rate of Technical Substitution
7. Factor productivities
8. Productivity
9. Factor productivities
10. External economies

UNIT IV

Markets & Market Behavior, Classification of Markets, Virtual Markets, Perfect Competition Market, Imperfect Competition Markets, Monopolistic Competition Market, Monopoly, Oligopoly, Strategies of Oligopolists, Agriculture Markets & Overview of Market Laws, Overview of Agriculture Market Committees (AMCs), Price Determination under different market structures.

4.1 Markets & Market Behavior

Q1. Define market. Explain the features of market.

Ans :

Meaning

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.

Definitions

(i) **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".

(ii) **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".

(iii) **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

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 : **(Jan.-19)**

Meaning

Market structure is a set of market characteristics that determine the nature of market in which a firm operates. It refers to economically significant features of a market, which affects the behaviour and working of firm in the industry.

Definition

(i) According to Pappas and Hirschey, "Market structure refers to the number and size distribution of buyers and sellers in the market for a goods or services".

Thus, market structure deals with the selected number of the characteristics through buyers and sellers.

1. Degree of Seller Concentrations

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.

4.1.1 Classification of Markets

Q3. Explain the classifiction of markets.

Ans :

I. On the Basis of Geographic Location

1. **Local Markets:** In such a market the buyers and sellers are limited to the local region or area. They usually sell perishable goods of daily use since the transport of such goods can be expensive.
2. **Regional Markets:** These markets cover a wider are than local markets like a district, or a cluster of few smaller states
3. **National Market:** This is when the demand for the goods is limited to one specific country. Or the government may not allow the trade of such goods outside national boundaries.
4. **International Market:** When the demand for the product is international and the goods are also traded internationally in bulk quantities, we call it an international market.

II. On the Basis of Time

1. **Very Short Period Market:** This is when the supply of the goods is fixed, and so it cannot be changed instantaneously. Say for example the market for flowers, vegetables. Fruits etc. The price of goods will depend on demand.
2. **Short Period Market**: The market is slightly longer than the previous one. Here the supply can be slightly adjusted.
3. **Long Period Market**: Here the supply can be changed easily by scaling production. So it can change according to the demand of the market. So the market will determine its equilibrium price in time.

III. On the Basis of Nature of Transaction

1. **Spot Market:** This is where spot transactions occur, that is the money is paid immediately. There is no system of credit
2. **Future Market**: This is where the transactions are credit transactions. There is a promise to pay the consideration sometime in the future.

IV. On the Basis of Regulation

1. **Regulated Market**: In such a market there is some oversight by appropriate government authorities. This is to ensure there are no unfair trade practices in the market. Such markets may refer to a product or even a group of products. For example, the stock market is a highly regulated market.
2. **Unregulated Market**: This is an absolutely free market. There is no oversight or regulation, the market forces decide everything

V. On the basis of competition

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.

4.1.2 Virtual Markets

Q4 What is meant by Virtual Markets? State the features of Virtual Markets.

Ans :

Meaning

Virtual market refers to a market which creates a platform of selling process by combining supply and demand, technology and economic requirements to effectively utilize resources. Virtual markets facilitates small businesses to promote their products and brand.

Features

1. It develops connection between large number of market participants i.e., buyers and sellers.
2. Virtual markets develops cooperation between service provider and customer through latest and reliable information.
3. Transactions can be done from any situations in virtual market as it deals in immaterial products.
4. Virtual markets reduce the problems in evaluation of service products by providing access to information about company and experiences of other users.

4.2 Perfect Competition Market

Q5. What is Perfect Competition Market? Explain the characteristics of Perfect Competition Market.

(OR)

What are the important characteristics of Perfect Competition?

(OR)

State the features of Perfect Competition.

Ans :

Meaning

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.

Definitions

(i) According to A. Koutsoyiannis, "Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms".

(ii) 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

The following are features of perfect competition. In other words, these are the assumptions underlying perfect markets.

(a) Large number of buyers and sellers

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

(b) Homogeneous products or services

The products and services of each seller should be homogeneous. They cannot be differentiated from that of one another. It makes no difference to the buyer whether he buys from firm X or firm Z. In other words, the buyer does not have any particular preference to buy the goods from a particular trader or supplier. The price is one and the same in every firm. There are no concessions or discounts.

(c) Freedom to enter or exit the market

There should not be any restrictions on the part of the buyers and sellers to enter the market or leave the market. There should not be any barriers. The buyers can enter the market or leave the market whenever they want.

(d) Perfect information available to the buyers and sellers

Each buyer and seller has total knowledge of the prices prevailing in the market at every given point of time, quantity supplied, costs, demand, nature of product, and other relevant information. There is no need for any advertisement expenditure as the buyers and sellers are fully informed.

(e) Perfect mobility of factors of production

There should not be any restrictions on the utilisation of factors of production such as land, labour, capital and so on. In other words, the firm or buyer should have free access to the factors of production. Whenever capital or labour is required, it should instantly be made available.

(f) Each firm is a price taker

An individual firm can alter its rate of production or sales without significantly affecting the market price of the product. A firm in a perfect market cannot influence the market through its own individual actions. It has no alternative other than selling its products at the price prevailing in the market. It cannot sell as much as it wants at its own set price.

4.2.1 Price-Output Determination under Perfect Competition

Q6. How price is determined under perfect competition?

(OR)

Explain price and output determination under perfect competition.

Ans : **(Nov.-20, Feb.-17)**

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.

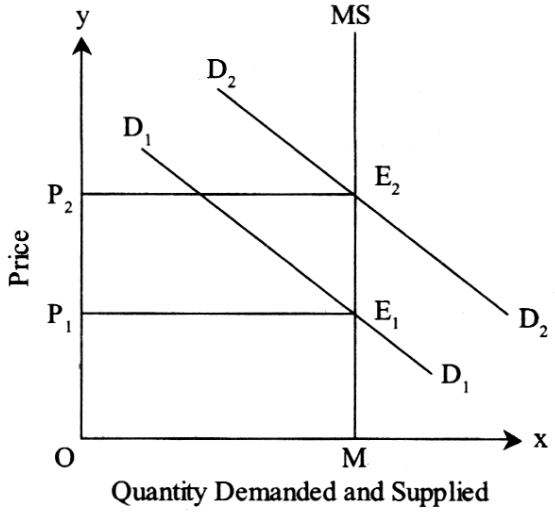


Fig : Price Determination during Market Period

(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

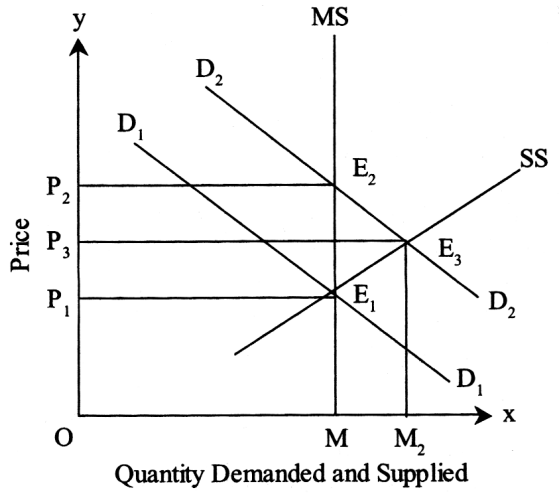


Fig : Price Determination during Short - period

(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.

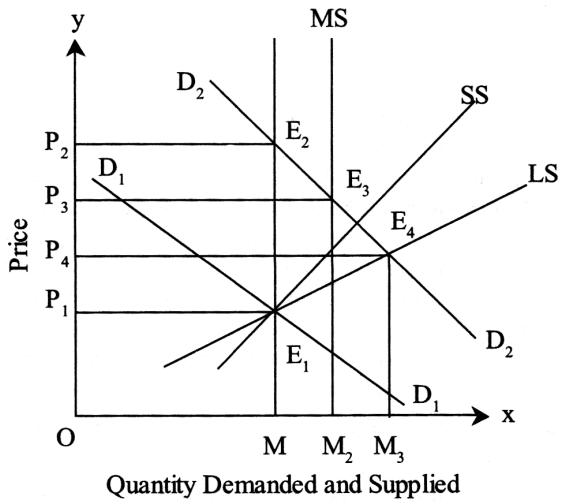


Fig : Price Determination during Long-period

(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.

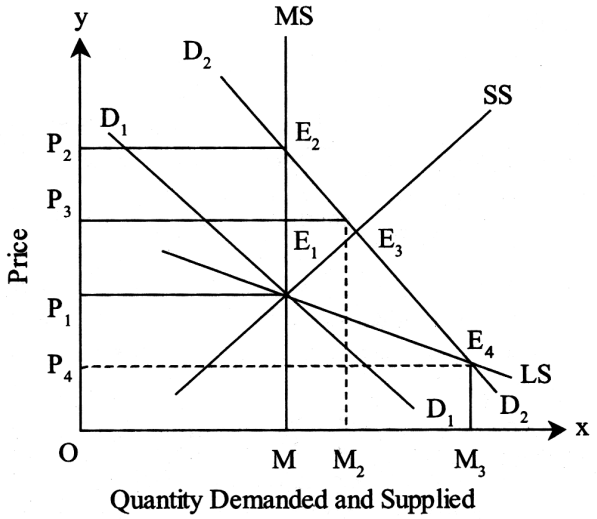


Fig : Price Determination in Decreasing Cost Industry

(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.

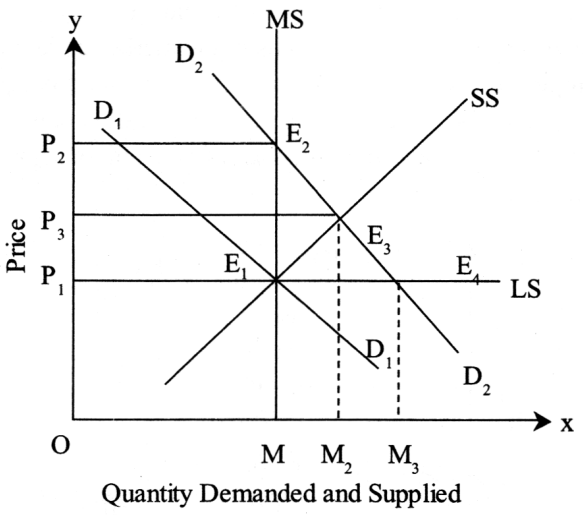


Fig : Price Determination in Constant Cost Industry

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_1 . 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.

Q7 "Under perfect competition a firm is a price taker and not a price maker". Explain.

Ans :

The individual firm under perfect competition has no control over the market price. This means there is no other way for it to accept the price as given by the market. Market forces determine the price and the individual firm has to accept it. The individual firm has absolutely no control over price determination. Thus, the individual firm has no choice other than accepting the given market price.

A good example is agricultural market, where individual farmer has no control over the market price determination and he has to accept the prevailing market price.

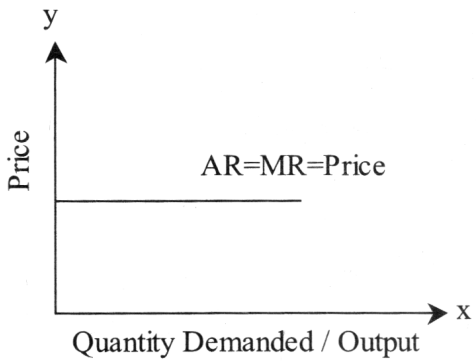


Fig : Demand Curve for the Firm Under Perfect Competition

In the figure above, it can be observed that the demand curve for the output of individual firm is a horizontal line parallel to x-axis at the given market price.

In case of perfect competition, the firm cannot change the market price even if it sells the whole of its produced output. Therefore, the price, Average Revenue (AR), and Marginal Revenue (MR) are equal to each other which are also shown in the figure.

There is only alternative available to a firm is that it can sell any quantity at the given market price. If it wants to sell at a higher price, nobody will buy from it because they can buy same from others at the given market prices, which are lower.

Firm and Industry Equilibrium Under Perfect Competition

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.

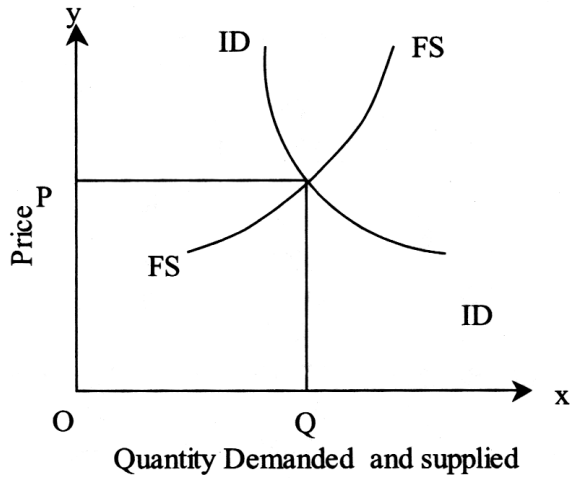


Fig : Price Determination in Case of the Firm and Industry Under Perfect Competition

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.

Q8. What are the advantages and disadvantages of Perfect Competition?

Ans :

Advantages

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

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.

4.3 Imperfect Competition Markets

Q9 What do you mean by Imperfect Competition Markets?

Ans :

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.

4.3.1 Monopolistic Competition Market

Q10 What is monopolistic competition? Explain the features of monopolistic competition.

Ans : **(Nov.-20, Feb.-20, June-18, Aug.-17)**

Meaning

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.

Definitions

(i) 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".

(ii) 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

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.

4.3.1.1Price-Output Determination in Monopolistic Competition

Q11 How is price output determined under monopolistic competition?

Ans : **(Feb.-20, Aug.-18, Aug.-17)**

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.

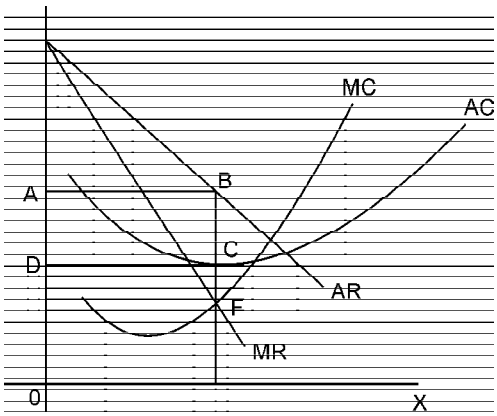


Fig.: Price-Output Determination in Monopolistic Competition in the Short-run

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.

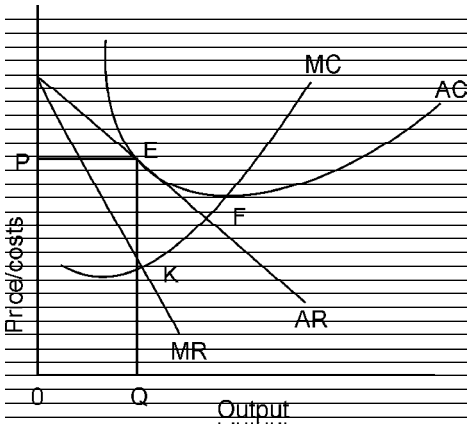


Fig.: Price-output Determination in Monopolistic Competition in the Long run

Q12 What are the advantages and disadvantages of Monopolistic Competition ?

Ans :

Advantages

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

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.

4.3.2 Monopoly

Q13. Define monopoly. What are the characteristics of monopoly?

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

Introduction

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

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.

Definitions

(i) 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."

(ii) 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"

(iii) 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."

(iv) According to 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

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.

Q14. Explain the classification of monopoly.

Ans :

I. 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.

II. 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.

III. 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.

4.3.2.1 Price-Output Determination under Monopoly

Q15. Explain briefly about price-output determination under monopoly in the short-run market.

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

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).

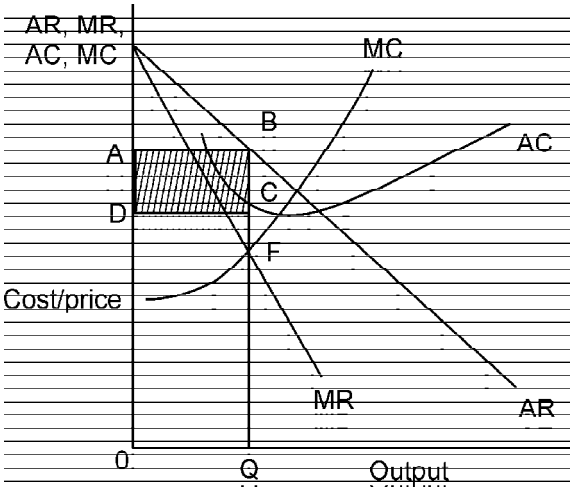


Fig.: Price-Output Determination in Monopoly

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.

Q16. How is price output determination under mono-poly in the long run market?

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

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.

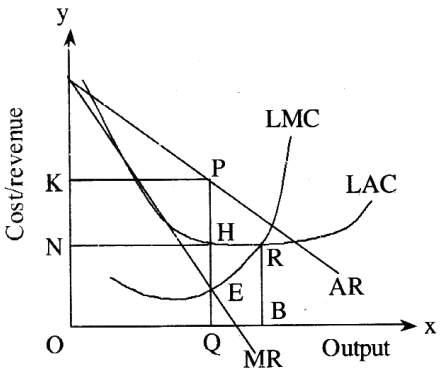


Fig.

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.

Q17. What are the advantages and disadvantages of Monopoly ?

Ans :

Advantages

"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

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.

Q18. Distinguish between Perfect Competition and Monopoly

Ans :

S.No.	Nature	Perfect competition	Monopoly
1.	**Relation between AR**	AR = MR	AR > MR
2.	**Profit in the long-run long-run**	Normal profits in the long-run also.	Supernormal profits in the
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.

4.3.3 Oligopoly

Q19. Define oligopoly. Explain the features of oligopoly.

Ans : **(Nov.-20, June-18, Jan.-18)**

Meaning

Oligopoly is an important form of imperfect competition. Since 'oligo' means few and 'poly' means seller, oligopoly refers only few seller or firms.

The automobile industry in India is oligopolistic in structure as only few firms produce and supply automobiles. In fact, competition among few firms is the basic ingredient of the oligopolistic market structure.

Features

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.

4.3.3.1 Strategies of Oligopolists

Q20. Explain the various strategies adopted by firms in oligopoly market structures.

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 B 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., BM), 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.

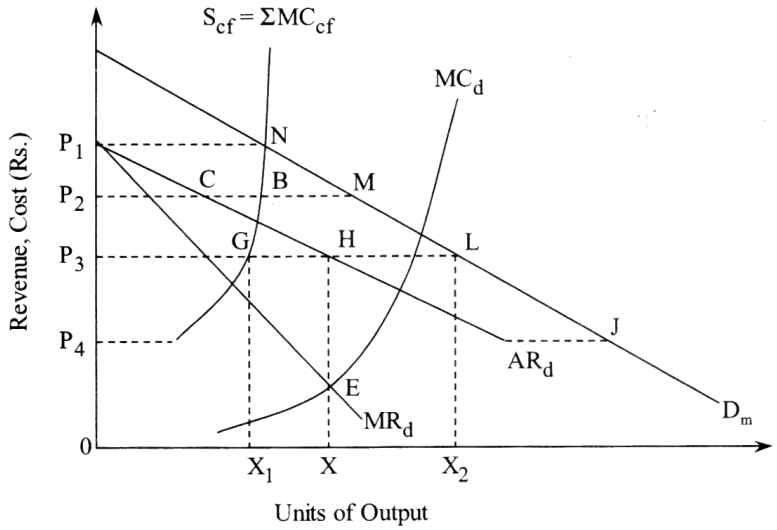


Fig. : Dominant-firm Price Leadership

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 (MR_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_g. 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.

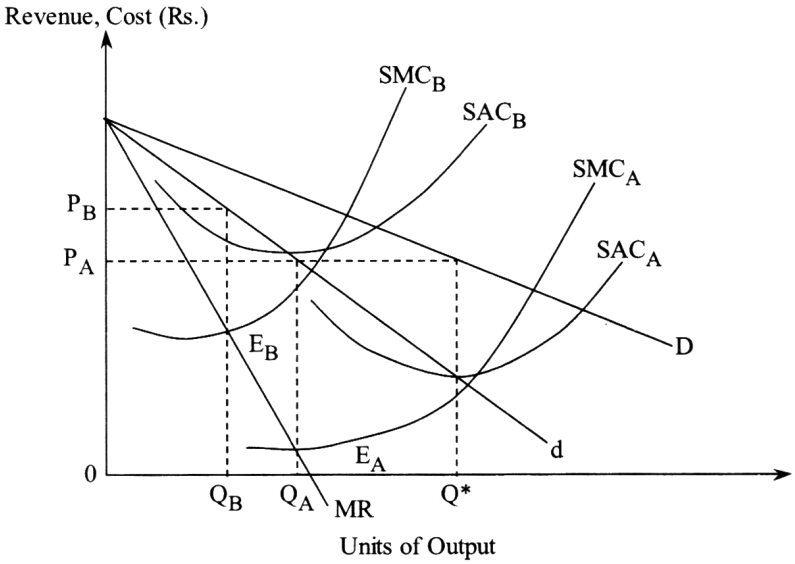


Fig. : Low-cost Price Leader

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 maneuvers. 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.

Q21. Out line the reasons of objectives of price rigidity in oligopoly.

Ans : **(June-18)**

1. An oligopoly firm tries to stick to the going price in the market because if it makes any price change, it will have to incurr more expenditure on sales promotion which will not be economical for the firm.
2. The oligopoly firms don't change prices because the established price is a result of their efforts on maneuvers and negotiations. Any price change will disturb all the firms.
3. If oligopoly firms enter into a collusion, they set a low price to make sure that other new firms don't get a chance to enter into the market. Thus, these mutually agreed firms avoid changing price.
4. Oligopoly firms focus on sales promotion rather than cutting the price when demand for their product falls.

Q22. Explain briefly about kinked demand curve.

(OR)

What is kinked demand curve?

(OR)

Explain price determination under oligopoly.

Ans : **(Nov.-21, Aug.-21. Aug.-18, Jan.-18)**

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

(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.

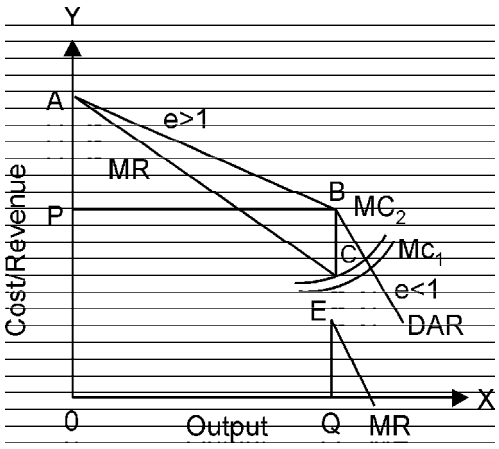


Fig.: Kinked demand

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.

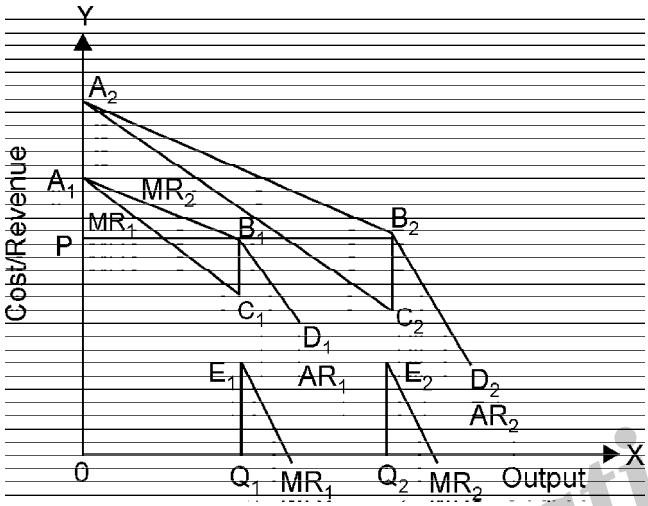


Fig.: Price Rigidity

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.

Q23. Distinguish between oligopoly and perfect competition.

Ans : **(Imp.)**

S.No.	Oligopoly	S.No.	Perfect Competition
1.	Oligopoly is the market in which firms compete with each other.	1.	In perfect competition type of market structure, all firms compete with each other as they act as price takers in the market.
2.	It may either produce homogenous or heterogenous products.	2.	It produces only homogenous products.
3.	It consists of few number of sellers and large number of buyers.	3.	It has large number of sellers catering to the needs of large number of buyers
4.	Due to wide scope of product differentiation, firms have to encounter entry barriers.	4.	Free entry and exit for the firms.
5.	Price is not uniform throughout the market	5.	Price remains constant throughout the market
6.	Firms are price makers.	6.	Firms are price takers.
7.	Output is less	7.	Output is more

Q24. Distinguish between perfect competition, monopoly, monopolistic competition and oligopoly.

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

S.No.	Nature	Perfect competition	Monopoly	Monopolistic competition	Oligopoly
1.	**Number of sellers**	Large number of sellers	Single seller	Large number of small sellers	Small number of large sellers
2.	**Product**	Products of all sellers are homogeneous.	Monopolist may sell homogenous or differentiated products.	Products are different but are close substitutes of one another	Products may or may not be different from each other.
3.	**Demand**	A competitive firm faces perfectly elastic demand curve as under,	Monopoly firm has a downward curve as under,	Like monopoly the firm under monopolistic competition also has a negatively sloping demand curve (but more elastic) as under.	Demand curve here is indeterminate
4.	**Price**	Uniform price prevails in the entire market and every firm here is a price taker.	Monopoly firm may or may not charge uniform price from its different buyers. Firm here is a price-maker.	Since product differentiation is the chief feature of this market, different sellers charge different prices for their products.	Prices of the products are different here. An individual firm can influence the price.

4.4 AGRICULTURE MARKETS

Q25. What is Agriculture Market? Explain the classification of agricultural markets.

Ans : **(Imp.)**

Meaning

An agricultural market is defined as a market in which agricultural products move from farmers to the final users or consumers.

Classification

1. Primary or Local Markets

Primary markets, known as Hatts or Shandies are held once or twice a week in the neighbourhood of a group of villages. There are more than 22,000 such markets in India. Most of the agriculturists sell their farm products in these markets. More than 50% of the total marketed surplus is sold in these markets. These markets are organized by village Panchayats who charge some rent from shopkeepers for the space occupied. Haggling and bargaining is a common feature of these markets. The village bania acts as a middleman in these markets.

2. Secondary Markets

These are also known as 'wholesale' or 'assembling' markets and are called 'mandis' or 'gungs'. There are about 4145 such markets. These markets are permanent in nature; business in the markets is transacted regularly throughout the year.

The produce is handled in large quantities and specialized operators become necessary for the performance of different services. The markets provide facilities of storage, handling and banking services and are well-served by roads and railways. A number of middlemen operate in these markets.

3. Terminal Markets

These markets perform the function of carrying goods to consumers, final buyers or to places of processing. Such markets are to be found in big cities or at ports. The area of their operation extends over a state.

4. Fairs

Fairs held on religious occasions at pilgrim centres are important sources of marketing of agricultural produce in India. Such fairs are held annually and are organized by district officers, local bodies or private agencies. These fairs are very popular in Bihar, W. Bengal, UP, Orissa, Maharashtra, Gujarat and Rajasthan.

5. Regulated Markets

These have been set up by the Government with the purpose of checking fraudulent practices which are generally practiced by traders in the primary and secondary markets. In these markets, the rules and regulations are prescribed by the Government marketing practices.

6. Co-Operative Marketing

These markets function on the basis of principles of cooperation. A cooperative marketing society carry the agricultural produce direct to the consumers thus eliminating a large army of middlemen and intermediaries.

7. State Trading

State trading in agricultural produce has become an important element of agricultural marketing in India. State agencies like, Food Corporation of India, set up their exclusive centres in and around villages and mandis at harvest time to procure produce from peasants to Government at fixed prices.

4.4.1 Overview of Market Laws

Q26. Describe latest agricultural market laws.

Ans : **(Imp.)**

1. Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020

The Farmers 'Produce Trade and Commerce (Promotion and Facilitation) Act, 2020 was an act of the Indian Government that permits intra-state and inter-state trade of farmers' produce beyond the physical premises of Agricultural Produce Market Committee (APMC) market yards (mandis) and other markets notified under state APMC Acts.

The Act was collectively passed as part of the 2020 Farm Bills.

The Government of India has transferred the money for the wheat procured by the Food Corporation of India (FCI) in April, 2021, directly to the Bank Accounts of Farmers - an amount of Rs. 13.71 crore benefiting around 1.6 lakh farmers in Punjab has been transferred online.

2. Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020

The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 was an act of the Indian Government that creates a national framework for contract farming through an agreement between a farmer and a buyer before the production or rearing of any farm produces. The act was collectively passed as part of the 2020 Farm Bills.

The Government asserts that the Act helps protect farmers engaging with agribusiness firms, processors, wholesalers, exporters, or large retailers for farm services and sale of future farming produce by a mutually-agreed lucrative price framework fairly and transparently through a contract.

The Act provided for a 3-level dispute settlement mechanism by the conciliation board, Sub-Divisional Magistrate, and

Appellate Authority. The agreement had to provide for a conciliation board as well as a conciliation process for the settlement of disputes.

3. Essential Commodities Act

The Essential Commodities Act is an act of the Parliament of India that was established to ensure the delivery of certain commodities or products, the supply of which, if obstructed due to hoarding or black marketing, would affect the normal life of the people. This includes foodstuff, drugs, fuel (petroleum products) etc.

The ECA was enacted in 1955 and has since been used by the Government to regulate the production, supply, and distribution of a whole host of commodities that it declares 'essential' to make them available to consumers at fair prices. Additionally, the government can also fix the minimum support price (MSP) of any packaged product that it declares an "essential commodity".

The list of items under the Act includes drugs, fertilizers, pulses, and edible oils, as well as petroleum and petroleum products. The Centre can include new commodities as and when the need arises, and take them off the list once the situation improves.

4.4.2 Overview of Agriculture Produce Market Committees (APMCs)

Q27. What is Agriculture Produce Market Committees (APMCs)? State its objectives.

Ans : **(Imp.)**

Agricultural Produce Market Committees (APMC) is the marketing boards established by the state governments in order to eliminate the exploitation incidences of the farmers by the intermediaries, where they are forced to sell their produce at extremely low prices.

All the food produce must be brought to the market and sales are made through auction. The market place i.e, Mandi is set up in various places within the states. These markets geographically divide the state. Licenses are issued to the traders to operate within a market. The mall owners, wholesale traders, retail traders are not given permission to purchase the produce from the farmers directly.

Objectives

- Providing a sound environment for normal functioning of demand and supply forces.
- Ensuring reasonable profit margins for growers or farmers.
- Prevent market malpractices.
- Promotion of market competition.
- Providing facilities necessary for a proper infrastructure.
- Ensuring that transactions are conducted in a transparent manner.

Q28. What are the responsibilities and functions of APMC.

Ans : **(Imp.)**

- Ensuring transactions taking place in the market area.
- Focus on providing complete transparency in the pricing system.
- Ensuring payment for the agricultural produce that is sold by the farmers, on the same day.
- Promotion of public-private partnership in the management of agricultural markets.
- Promotion of agricultural processing, apart from activities for value addition in the agricultural products.
- Publicising data regarding arrivals of agricultural produce in addition to their rates, brought for sale in the market area.
- Appointing the chief executive officer of the market committee amongst the professionals, chosen from the open market.

Q30. Explain the working mechanism of APMC.

Ans : **(Imp.)**

The APMC trades in two ways – Negotiated Trade and Auction Trade. In a negotiated trade the sellers approach traders for getting a price quote and this trade generally refers to a dealer market. Before arriving at a mutually accepted price the price is either accepted or negotiated. In an auction trade a commodity is sold through the open outcry method and it refers to an open auction market. Here local supply and demand determines the price of the produce. Auction is facilitated by an official from the APMC, or a professional auctioneer.

Speaking about clearing of trades, the deals are cleared with buyers/sellers immediately after the transaction and the buyer has to conduct an inspection of his produce for quality and quantity, at the time when the trade is cleared with the seller. When the trading day ends then price paid and volumes are reported and the trader then pays the fees or cess.

Farmers bring their produce from the fields to the nearest APMC for sale. Once the produce is brought, the traders then sell the goods to buyers. Since there are no long term storage facilities in the market yard the APMC permits traders to keep the produce in the yard overnight in case the produce is not sold on the same day. In this way APMC facilitates trade settlements and any dispute regarding produce quality that emerges after the delivery is between the trader and buyer/seller, once the trade settlement gets accomplished.

The trader pays two types of fees – Basic Transaction fee which comprises a fraction of the value of the traded volumes. Second fee is in the form of taxes. The market fees may vary significantly across different states. Intermediaries such as commission agents, wholesalers, sub wholesalers, auctioneers, packers, graders and laborers are the other market participants, apart from regular buyers and sellers, who are involved in facilitating trades. For participating in the auction a buyer has a license issued by the APMC.

Short Question and Answers

1. What is 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.

Assumptions

(i) There are two firms namely A and B.

(ii) Product of both the firms is homogeneous.

(iii) There is a particular price prevailing in the market.

2. Define oligopoly.

Ans :

Meaning

Oligopoly is an important form of imperfect competition. Since 'oligo' means few and 'poly' means seller, oligopoly refers only few seller or firms.

The automobile industry in India is oligopolistic in structure as only few firms produce and supply automobiles. In fact, competition among few firms is the basic ingredient of the oligopolistic market structure.

Features

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.

3. What do you understand by market structure?

Ans :

Meaning

Market structure is a set of market characteristics that determine the nature of market in which a firm operates. It refers to economically significant features of a market, which affects the behaviour and working of firm in the industry.

Definition

(i) According to Pappas and Hirschey, "Market structure refers to the number and size distribution of buyers and sellers in the market for a goods or services".

Thus, market structure deals with the selected number of the characteristics through buyers and sellers.

1. Degree of Seller Concentrations

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.

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4. Define Market.

Ans :

Meaning

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.

Definitions

(i) 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".

(ii) 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".

(iii) 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".

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5. What is meant by Virtual Markets? State the features of Virtual Markets.

Ans :

Meaning

Virtual market refers to a market which creates a platform of selling process by combining supply and demand, technology and economic requirements to effectively utilize resources. Virtual markets facilitates small businesses to promote their products and brand.

Features

1. It develops connection between large number of market participants i.e., buyers and sellers.
2. Virtual markets develops cooperation between service provider and customer through latest and reliable information.
3. Transactions can be done from any situations in virtual market as it deals in immaterial products.
4. Virtual markets reduce the problems in evaluation of service products by providing access to information about company and experiences of other users.

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6. Perfect Competition Market.

Ans :

Meaning

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.

Definitions

(i) According to A. Koutsoyiannis, "Perfect competition is a market structure characterised by a complete absence of rivalry among the individual firms".

(ii) 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".

7. Imperfect Competition Markets?

Ans :

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.

8. What is monopolistic competition?

Ans :

Meaning

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.

Definitions

(i) 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".

(ii) 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.

9. 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

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.

Definitions

(i) **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."

(ii) **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"

10. Advantages Monopoly.

Ans :

"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.

11. Out line the reasons of objectives of price rigidity in oligopoly.

Ans :

1. An oligopoly firm tries to stick to the going price in the market because if it makes any price change, it will have to incurr more expenditure on sales promotion which will not be economical for the firm.
2. The oligopoly firms don't change prices because the established price is a result of their efforts on maneuvers and negotiations. Any price change will disturb all the firms.
3. If oligopoly firms enter into a collusion, they set a low price to make sure that other new firms don't get a chance to enter into the market. Thus, these mutually agreed firms avoid changing price.
4. Oligopoly firms focus on sales promotion rather than cutting the price when demand for their product falls.

12. Distinguish between oligopoly and perfect competition.

Ans :

S.No.	Oligopoly	S.No.	Perfect Competition
1.	Oligopoly is the market in which firms compete with each other.	1.	In perfect competition type of market structure, all firms compete with each other as they act as price takers in the market.
2.	It may either produce homogenous or heterogenous products.	2.	It produces only homogenous products.
3.	It consists of few number of sellers and large number of buyers.	3.	It has large number of sellers catering to the needs of large number of buyers
4.	Due to wide scope of product differentiation, firms have to encounter entry barriers.	4.	Free entry and exit for the firms.

13. What is Agriculture Produce Market Committees (APMCs)?

Ans :

Agricultural Produce Market Committees (APMC) is the marketing boards established by the state governments in order to eliminate the exploitation incidences of the farmers by the intermediaries, where they are forced to sell their produce at extremely low prices.

All the food produce must be brought to the market and sales are made through auction. The market place i.e, Mandi is set up in various places within the states. These markets geographically divide the state. Licenses are issued to the traders to operate within a market. The mall owners, wholesale traders, retail traders are not given permission to purchase the produce from the farmers directly.

14. What are the responsibilities and functions of APMC.

Ans :

- Ensuring transactions taking place in the market area.
- Focus on providing complete transparency in the pricing system.
- Ensuring payment for the agricultural produce that is sold by the farmers, on the same day.
- Promotion of public-private partnership in the management of agricultural markets.
- Promotion of agricultural processing, apart from activities for value addition in the agricultural products.
- Publicising data regarding arrivals of agricultural produce in addition to their rates, brought for sale in the market area.

Choose the Correct Answers

1. Which of the following statements is true for both monopolistically competitive and oligopolistic industries? [a]

   (a) Firms have some degree of control over prices

   (b) Producers cannot benefit from knowing other firms' plans

   (c) It is impossible for new firms to enter the industries

   (d) Collusion and the creation of cartels is common

2. Which of the following best describes an oligopoly? [b]

   (a) Many monopolistically competitive firms

   (b) A few firms sharing monopoly power

   (c) A former monopoly that has been broken up by the government

   (d) A government-granted franchise or monopoly

3. Which of the following is not a type of market structure? [a]

   (a) Competitive monopoly (b) Perfect competition

   (c) Oligopoly (d) All of the above are types of market structures

4. If the market demand curve for a commodity has a negative slope then the market structure must be _____. [a]

   (a) The market structure cannot be determined from the information given

   (b) Imperfect competition

   (c) Perfect competition

   (d) Monopoly

5. If a firm sells its output on a market that is characterized by many sellers and buyers, a homogeneous product, unlimited long-run resource mobility, and perfect knowledge, then the firm is a [a]

   (a) A perfect competitor (b) A monopolistic competitor

   (c) A monopolist (d) An oligopolist

6. Marginal revenue is equal to price for which one of the following types of market structure? [a]

   (a) Perfect competition (b) Monopolistic competition

   (c) Monopoly (d) Oligopoly

7. Which of the following industries is most likely to be monopolistically competitive? [a]

   (a) The car repair industry (b) The electrical generating industry

   (c) The automobile industry (d) None of the above

8. Product variation refers to _____. [a]

(a) An activity undertaken by a firm to increase demand

(b) An activity undertaken by a firm to make demand more price inelastic

(c) A problem with quality control that tends to decrease demand

(d) None of the Sabha

9. If an imperfectly competitive firm is producing a level of output where marginal cost is equal to marginal revenue, marginal revenue is below average variable cost, and price is equal to average total cost, then the firm is _____. [a]

(a) Minimizing short-run average total cost

(b) In short-run equilibrium

(c) In long-run equilibrium

(d) Breaking even

10. If an imperfectly competitive firm is producing a level of output where marginal cost is equal to marginal revenue, marginal revenue is below average variable cost, and price is equal to average total cost, then the firm is _____. [d]

(a) Should increase output

(b) Should shut down

(c) Should decrease output, but should not shut down

(d) None of the above is correct.

11. The demand curve faced by a monopolistically competitive firm is _____. [a]

(a) Elastic (b) Unit elastic

(c) Perfectly elastic (d) Inelastic

12. Which of the following is a characteristic of monopolistic competition? [c]

(a) Easy entry into and exit from the industry

(b) A differentiated product

(c) Few sellers

(d) All of the above are characteristics of monopolistic competition.

13. Which of the following is a differentiated product? [d]

(a) An automobile (b) A hamburger

(c) A shirt (d) All of the above are differentiated products

14. Which of the following types of firms is likely to be a monopolistic competitor? [b]

(a) An automobile manufacturer

(b) A restaurant

(c) A local telephone company

(d) All of the above are likely to be monopolistic competitors

Fill in the blanks

1. The term _____ refers to a particular place where goods are purchased and sold.
2. _____ is a set of market characteristics that determine the nature of market in which a firm operates.
3. _____ facilitates small businesses to promote their products and brand.
4. _____ point is the state at which firm enjoys maximum profits and it has no incentive either to reduce or increase its output level.
5. Monopoly comes from the greek monos _____ and polein _____.
6. _____ refers to a market situation where there are many firms selling a differentiated product.
7. _____ formulated a model to explain interdependence among firms in the oligopoly market.
8. An _____ market is defined as a market in which agricultural products move from farmers to the final users or consumers.
9. _____ is the marketing boards established by the state governments in order to eliminate the exploitation incidences of the farmers by the intermediaries, where they are forced to sell their produce at extremely low prices.
10. The _____ is an act of the Parliament of India that was established to ensure the delivery of certain commodities or products, the supply of which, if obstructed due to hoarding or black marketing, would affect the normal life of the people.

ANSWERS

1. Market
2. Market structure
3. Virtual markets
4. Equilibrium
5. Single, to sell
6. Monopolistic competition
7. Paul Sweezy
8. Agricultural
9. Agricultural Produce Market Committees
10. Essential Commodities Act

UNIT V

Macro Economics: National Income concepts and Measurement Income, Employment and Investment, Keynesian Theory & Employment and Investment, Inflation: Types of Inflation, Control Technique of Inflation. Fiscal policies – Budget – Current Budget.

5.1 MACRO ECONOMICS

Q1. What is Macro Economics? Explain the nature and scope of Macro Economics.

Ans :

Meaning

Macro economics is a study of the economy as a whole, and the variables that control the macroeconomy.

The study of government policy meant to control and stabilize the economy over time, that is, to reduce fluctuations in the economy is known as macro economics.

Macro economics also includes the study of monetary policy, fiscal policy, and supply-side economics.

The term Macro is derived from the Greek word "MAKROS" which means large. It deals with the aggregates such as national income, output, employment and the general price level etc, therefore it is called the Aggregative Economics.

Definitions

(i) According to Shapiro, "Macroeconomics deals with the functioning of the economy as a whole".

(ii) According to Boulding, "Macroeconomics deals not with individual quantities as such, but with aggregates of these quantities, not with individual income but with national income, not with individual output but with national output".

(iii) According to Prof. Ackley defines Macro Economics as "Macro Economics deals with economic affairs 'in the large, it concerns the overall dimensions of economic life. It looks at the total size and shape and functioning of the elephant of economic experience, rather than working of articulation (or) dimensions of the individual parts. It studies the character of the forest, independently of the tress which compose it."

Why macroeconomics and not only microeconomics?

The whole is more complex than the sum of independent parts. It is not possible to describe an economy by forming models for all firms and persons and all their cross-effects.

Macroeconomics investigates aggregate behavior by imposing simplifying assumptions ("assume there are many identical firms that produce the same good") but without abstracting from the essential features.

These assumptions are used in order to build macroeconomic models. Typically, such models have three aspects: the 'story', the mathematical model, and a graphical representation.

Scope

The scope of macro economics has been explained as under:

1. Theory of National Income

Macro economics studies the concept of national income, its different elements, methods of its measurement and social accounting.

2. Theory of Employment

It studies the problems of employment and unemployment. There are different factors which determine employment. They are like effective demand, aggregate demand, aggregate supply, total consumption, total savings and total investment etc.

3. Marco Theory of distribution

There are macro economic theories of distribution. These theories try to explain how the national output is distributed among the factors of production.

4. Economic development

Economic development is a long run process. In it, we analyze the problems and theories of development.

5. Theory of International Trade

It also studies principles determining trade among different countries. Tariff's protection and free-trade polices fall under foreign trade.

6. Theory of Money

Changes in demand and supply of money effect level of employment. Therefore, under macro economics functions of money and theories relating to money are studied.

7. Theory of Business Fluctuations

It also deals with the fluctuations in the level of employment, total expenditure, and general price level.

8. Theory of General Price Level

A continuous rise in the price level is called inflation. It distorts production. It increases inequalities in the distribution of income and wealth.The common man is injured by inflation. Deflation is the opposite of inflation. The general price level falls continuously. Output and employment levels fall. Macro economics provides explanation provides explanation for the occurrence of inflation and deflation.

Q2. Explain the importance of Macro Economics.

Ans :

1. In Economic Policies

Macro Economics is extremely useful from the view point of the fiscal policy. Modern Governments, particularly, the underdeveloped economies are confronted with innumerable national problems. They are the problems of over population, inflation, balance of payments, general under production etc. The main conscientiousness of these governments rests in the regulation and control of over population, general prices, general volume of commerce, general productivity etc.

2. In General Unemployment

Redundancy is caused by deficiency of effectual demand. In order eradicate it, effective demand should be raised by increasing total investment, total productivity, total income and consumption. Thus, macro economics has special significance in studying the causes, effects and antidotes of general redundancy.

3. In National Income

The study of macro economics is very significant for evaluating the overall performance of the economy in terms of national income. This led to the construction of the data on national income. National income data help in anticipating the level of fiscal activity and to comprehend the distribution of income among different groups of people in the economy.

4. In Economic Growth

The economics of growth is also a study in macro economics. It is on the basis of macro economics that the resources and capabilities of an economy are evaluated. Plans for the overall increase in national income, productivity, employment are framed and executed so as to raise the level of fiscal development of the economy as a whole.

5. In Multi-dimensional Study

Macroeconomics has a very wide scope and covers multi-dimensional aspects like population, employment, income, production, distribution, consumption, inflation, etc.

6. In Monetary Problems

It is in terms of macro economics that monetary problems can be analysed and understood properly. Frequent changes in the value of money, inflation or deflation, affect the economy adversely. They can be counteracted by adopting monetary, fiscal and direct control measures for the economy as a whole.

7. In Business Cycle

Moreover, macro economics as an approach to fiscal problems started after the great Depression, thus its significance falls in analysing the grounds of fiscal variations and in providing remedies.

8. For Understanding the Behaviour of Individual Units.For understanding the performance of individual units, the study of macro economics is imperative. Demand for individual products depends upon aggregate demand in the economy. Unless the causes of deficiency in aggregate demand are analysed it is not feasible to understand fully the grounds for a fall in the demand of individual products. The reasons for increase in costs of a specific firm or industry cannot be analysed without knowing the average cost conditions of the whole economy. Thus, the study of individual units is not possible without macro economics.

9. Helpful in understanding the functioning of an Economy Modern economy has become a very complex affair. Several economic factors which are interdependent operate in it. To have an understanding of its organization and functioning one cannot depend on individual unit alone. Study of an economy as a whole, has therefore, become very essential.

10. Balance of Payment

It explains factors which determine balance of payment. At the same time, it identifies causes of deficit in balance of payment and suggests remedial measures.

5.2 NATIONAL INCOME

Q3. Define National Income.

(OR)

What do you understand by National Income?

Ans : **(Nov.-20, June-18, Aug.-17, Feb.-17)**

National Income is the measure of all the goods and services that are produced by a country during a given period of time which are counted without any duplication. In this connection. The National Income committee formed in 1949 said "A national income estimate measures the volume of commodities and services turned out during a given period counted without any duplication".

In other words, national income estimates the productive capability (ability to produce goods and services) of an economy written within a given time period in order to satisfy the wants of people. The term national income is an uncertain term and is used interchangeably with the terms National Product or National Dividend, National Output and National Expenditure.

Definitions

The concept of national income is defined in different ways.

(i) According to National Income Committee 1951"A national income statistics provide a wide view of the country's entire economy, as well as of the various groups in the population who participate as producers and income receivers, and that, if available over a substantial period, they reveal clearly the basic changes in the country's economy in the past and suggest, if not fully reveal, trends for the future".

(ii) According to Marshall "The labour and capital of a country acting on its natural resources produce annually a certain net

aggregate of commodities, material and immaterials including services of all kinds. This is true net annual income or revenue of the country".

(iii) According to Fisher "National income includes that income which can be measured in terms of money".

(iv) According to "National income or dividend consists solely of services as received by ultimate consumers whether from the material or from their human environment".

5.2.1 Concepts

Q4. Explain the concepts of national income.

Ans : **(Nov.-20, Aug.-17)**

There are many concepts/determinants of national income. They are as follows.

1. Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is a measure of national income which is often used in macro economic analysis and policy formulation. GDP is the total flow of goods and services produced by an economy at market prices within a specified period of time, a year.

In other words it is the money value of the final products produced annually by an economy at the market prices. It is obtained by an aggregate value of goods and services produced at market prices.

GDP can also be defined as the difference of income earned locally by non-residents of a nation (foreigners) and the income earned by the residents of a national in other countries at market price.

Gross Domestic Product (GDP) is the total flow of goods and services product of by an economy at market prices in a specified period of time, usually one year.

2. Gross National Product (GNP)

Gross National Product (GNP) is the sum of market value of all final goods and services that are produced in a country during a given period of time, usually one year. The market vale of final goods here means the value of all goods and services is obtained at 'constant prices' and 'current prices'.

Therefore, GNP can be obtained at constant prices and current prices. GNP can also be defined as the money value of all goods and services generated or produced within a country and also outside the country. It is the sum of gross domestic product at market prices and net factors income from abroad/other countries.

i.e., GNP = GDP + NFIA

where,

NFIA - Net Factor Income from Abroad

GNP can also be defined as the sum of factor payments like wages, interest, profits, rent and depreciation. Thus, it is also called as 'GNP at factor cost'.

3. Net National Product (NNP) and Net Domestic Product (NDP)

Net National Product (NNP) and Net Domestic Product are the concept of national income that play a vital role in macroeconomic analysis. The Net National Product is obtained by deducting depreciation during the course of production from gross national profit.

In other words, it is the difference between gross national product and depreciation in the course of producing goods and services. It is represented as,

NNP = GNP - D

Where,

D - Depreciation

∴ NNP is the net of depreciation

Net domestic product is the difference of gross domestic product and depreciation in the course of production.

i.e., NDP = GDP - D

NNP and NDP are the measures of the national income that are available for consumption and net investment to the society.

Net National Product (NNP) = GNP – Depreciation

Net Domestic Product (NDP = GDP – Depreciation.

4. Personal Income (PI)

Personal income (PI) is defined as the total income received by the individuals of a nation from all the sources of income. Personal income includes salaries, wages, commissions and fees, fringe benefits, bonus, dividends, earnings from self-employment, earnings from interests, pensions, old age benefits, family allowances, social security allowances, unemployment allowances, sickness allowances etc., Personal income is obtained by

P1 = National income – Undistributed corporate profits – Profits taxes – Social security contribution + Transfer payments + Interests on public debt.

Where,

NI - National Income

(or)

PI = Net national product - [Undistributed company profits + Surplus of public undertakings + Rentals of public properties]

Personal Income (PI) is the total income received by the individuals of a nation from all the sources of income.

5. Disposable Income (I_d)

Disposable income (I_d) refers to the income which the people get actually to spend. All of the income that an individual gets is not disposable because a part of it is to be paid him/her in the form of income tax and other direct taxes. Disposable income is given by

Disposable Income = Personal Income - Personal taxes

6. Domestic Income

Domestic income refers to the income generated by the production factors within the nation from its own resources. Domestic income is also called as domestic product. Domestic income includes wages and salaries, interests, rent, dividends, an distributed profits, surplus of public undertakings, mixed income of an individual from a firm and self-employment etc., Domestic income can also be obtained by the difference of net income earned from abroad and national income.

∴ Domestic Income = National Income - Net national income from abroad.

7. Private Income

The income gained by individuals from different sources and earning from organizations. Private income is given by,

Private Income = Personal Income + Undistributed corporate profits + Tax on profit.

(or)

Private Income = Net national product at factor prices + Transfer payments + Rent on public debt-Social security - Profit and surplus of public undertakings.

8. Net National Product at Market price

Net national product at market price is that net value of all final goods and services produced by a nation at the market price in a given period of time. It is obtained by deducting the depreciation in the course of production from gross national profit market place.

∴ NNP at Market Price = GNP at market price - Depreciation

9. Net national Product at Factor Cost

Net national product at a factor cost is the net output obtained at factor prices. It is the income earned by the production factors by participating in the production process. NNP at factor prices is obtained by deducting Indirect taxes and subsidies from NNP at market price.

∴ NNP at factor cost = NNP at market price – Indirect taxes – Subsidies

= GNP at market price – Depreciation – Indirect taxes – Subsidies

10. Real Income

Real income refers to the national income expressed in terms of general price levels by taking a particular year as a base. The concept of real income was propounded mainly to avoid mistakes in national income calculation. Real income is also known as national income at constant prices. Real income is obtained by,

$$\text{Real Income} = \text{NNP of current year} \times \frac{\text{Base year index}}{\text{Current year index}}$$

11. Per Capita Income

Per Capita income is the average income of the individuals in a nation in a given period of time. Per capita income is given by,

$$\text{Per capital Income of a year} = \frac{\text{National income of that year}}{\text{Population of that year}}$$

Q5. Explain the nature of national income.

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

1. National income is the measure of all the goods and services produced by a country during a given period of time.
2. It measures or estimates the flow of goods and services in a given economy.
3. It is an indicator of development of a nation.
4. Its deals with the degree of economic problems of a nation like unemployment, inflation, food problems, balance of payments etc.
5. It is complex in nature but by comparing the national income data of one nation with another nation economic growth can be ascertained.

5.2.2 Measurement of National Income

Q6. Briefly explain the measurement of national income.

(OR)

What are the different methods of measuring national income?

(OR)

Explain the methods of measurement of national income.

Ans : **(Aug.-21, Feb.-20, Aug.-18, June-18, Jan.-18, Feb.-17)**

The process of income generation in a modern economy is an extremely complete process. The economists have devised a system of estimating National Income. The basic approach is to measure the two kinds of flows that economic activities generate i.e., product flows and money flows (Money flow as factor payments and money flow as payments for goods and services).

The national income of a country is measured by using three different methods.

Measurement of National Income

1. Product Method or Value added Method
2. Income Method
3. Expenditure Method

1. Product Method/ Value added Method

Product method is that method, which measures domestic money by estimating the contribution of each enterprise to production in the domestic territory of the country in an accounting year.

Product method or Value added method is also known as Industrial Origin Method or Net output Method or Inventory Method or Commodity Service method.

Value added is the difference between value of output of an enterprise and the value of its intermediate consumption.

Value added = Value of Output- Value of Intermediate consumption

Value of Output = Sales (if entire output of the year is sold during the year)

Value of output= Sales + Change in Stock

Value added = GDP mp

To calculate the national income by this method, we need to identify and classify productive enterprises in three categories:

1. Primary Sector
2. Secondary Sector
3. Tertiary Sector

Primary Sector includes agriculture and allied activities such as animal husbandry fisheries, forestry, and mining etc. The Secondary Sector includes manufacturing sector which converts the raw materials into finished products. The Tertiary Sector is the service sector which includes services such as banking, insurance, transport, communication and trade etc.

After classification, net value added in each sector is calculated in an accounting year. Gross value added is found by deducting the intermediate consumption from the value of production generated.

Precautions used in production or value added method

1. The sale and purchase of old goods and included but the commission charges by agents in their transaction is a part of national income.

2. Imputed value of production for self-consumption is taken into account. Because, these goods are like those produced for the market.
3. Imputed rent on the owner occupied house is included. Because all houses have rental value, no matter these are self occupied or rented out.
4. Value of intermediate goods is not included into the estimation of national income.
5. Services for Self-consumption are not considered while estimating value added. Because it is difficult to estimate their market value like services of housewives.
6. Income from illegal activities is not included in national income.

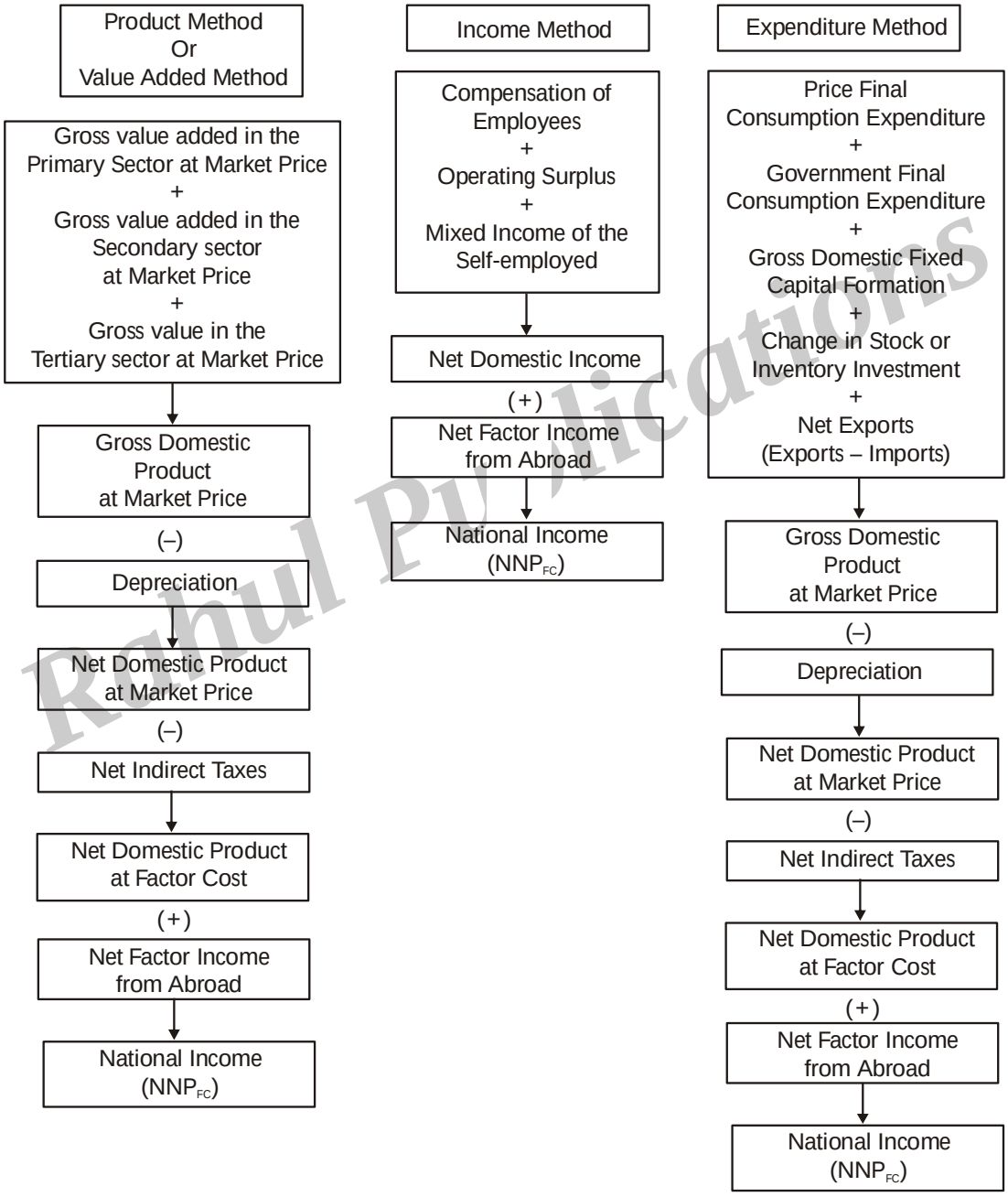


Fig.: Measurement of National Income

2. Income Method

This method is also known as factor cost method. Under this method, national income is obtained by adding the incomes such as rent, wages, interest and profit received by all persons in the country during a year. In practice, the income figures are obtainable mostly from income tax returns, books of accounts and published accounts. To this, net income from foreign trade and net investment from abroad should be added.

According to income method, the net income payments received by all citizens of a country in a particular year are added up. The net incomes earned by the factors of production in the form of rent, wage, interest and profit aggregated but incomes in the form of transfer payments are not included in the national income.

NDPFC = Compensation of Employees + Operating Surplus + Mixed Income Components of Income Method

Compensation of Employees: It includes Wages and salaries in cash, Employers contribution to social security scheme, Pension on retirement, Bonus, Allowances etc.

Operating Surplus: It includes rent and royalty, interest, profit (dividend + corporation tax + undistributed profits).

Mixed Income: It is the income of the self employed persons such as farmers, shopkeepers, doctors etc. They generate goods and services with the help of their own land, capital and labour and thus earn mixed income in the form of interest, profit rent and wages. This income is included in national income.

In India, this method is used for adding up the net income arising from trade, transport, public administration, professional and domestic services. Due to lack of popularity of personal accounting practices, this method cannot be fully used or practiced. This method is used only for some minor sectors. None of these methods alone will give a more correct figure.

Precautions

1. All transfer income which does not represent earnings from productive services such as pension, scholarship, unemployment doles, lottery prize, etc. are not to be included as they are not earned by participating in the current production.
2. All unpaid services like services of a housewife are to be excluded.
3. All capital gains or loss (buying an old house, or resale of property) should be excluded.
4. Direct tax, revenue to the government should be subtracted from the total income as it is only transfer of income.
5. Undistributed profits of companies, income from government etc. should be added.
6. Subsidies given by the government should be deducted from profits of the subsidized industry.
7. Income from sale of second hand goods is not included in national income.
8. Income from sales and purchase of old shares is not included in national income.

3. Expenditure Method

Expenditure method is the method which measures final expenditure on gross domestic product at market price during an accounting year. Final expenditure is equal to the gross domestic product at market price. This is also called “Income Disposal Method”, Consumption and Investment Method”.

According to the expenditure method, the total expenditure incurred by the society in a particular year is added together. According to these methods total expenditure equals the national income.

Following items are included in it:

1. Private Final Consumption expenditure
2. Govt. final consumption expenditure
4. Gross domestic capital formation
5. Change in stock
6. Net exports.

1. Private Final Consumption Expenditure

It consists of expenditure on durable goods (e.g., furniture, cars, etc), non-durable goods (e.g., food items and toiletries) and services (e.g., hotels, educational institutions, hospitals, public transport, etc.,) by the household consumers.

The figures of private consumption expenditure may be collected from retail trade activities during an accounting period.

But the purchases made by non-residents and foreign visitors should be deducted from the final consumption expenditure in the domestic market whereas direct purchases made by resident households abroad during foreign travel should be included in consumption expenditure.

2. Government Final Consumption Expenditure

The government final consumption expenditure refers to the final consumption expenditure by the general government and it can be arrived at by summing up

(a) Value of net purchases in the domestic market,

(b) Net purchases abroad.

3. Gross Fixed Capital Formation

If consists of

(a) Business fixed Investment,

(b) Govt. Fixed Investment,

(c) Investment on residential construction.

4. Change in Stock as Inventory Investment

Change in stock is the difference between the opening stock and closing stock. All enterprises and trading companies incur expenditure on stock of raw materials; semi finished goods or finished goods.

5. Net Exports of Goods and Services

It is the difference between the value of exports and imports of a country during an accounting period. What the foreigners spend on a country's exports is the part of expenditure on the Gross domestic product.

Precautions

1. Only expenditure on current final goods should be included so expenditure on second hand goods must not be added in aggregate expenditure.
2. The intermediate expenditure also must not be included as it leads to double counting.
3. Expenditure on transfer payments should not be taken account of.

4. Gross domestic capital formation already has in it the replacement of machines therefore these two items should not be separately included in aggregate expenditure.
5. Expenditure on financial transactions, e.g., shares and bonds should not be included because these transactions do not add to the flow of goods and services but only change the ownership of financial assets.
6. Only expenditure on final goods and services should be included in aggregate expenditure.
7. The aggregate expenditure got by adding up various components includes in itself the cost of depreciation. Thus, we have the concept of so as to arrive at the Net Domestic Product at market price; depreciation should be deducted from it.

Q7. Explain the Problems in the Measurement of National Income.

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

1. Lack of Sophisticated Machinery

As, computation of massive volume of data requires innovative use of advanced methods but most of the developing economies such as Indonesia, India and Peru lacks technical knowledge which is very important for the estimation of national income.

2. Problem of Expertise

Absence of experts Such as statisticians, analysts, programmers, researchers and others make the computation of national income to be a difficult task. As these experts can present and predict this national income data in a simplified and easy manner without committing too many mistakes.

3. Provision of False Information

In order to avoid high personal income taxes, some businessmen and self-employed people underestimate their earnings. Such provision of false data will cause a miscalculation of national income.

4. Problem of Estimation

As, the estimation of depreciation and imputed rent varies from country to country, its overestimation and underestimation distorts the actual value of national income of a country.

5. Problem of Measuring Quality

While estimating national income, statistician/ experts need to consider both the quality and quantity of goods and services. However, the main problem associated with the actual measurement of national income is the absence of absolute or standardized indicator for measuring quality.

5.3 KEYNESIAN THEORY & EMPLOYMENT AND INVESTMENT

Q8. Explain about Keynesian approach to the determination Employment and Investment

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

Keynes has strongly criticised the classical theory in his book 'General Theory of Employment, Interest and Money'. His theory of employment is widely accepted by modern economists. Keynesian economics is also known as 'new economics' and 'economic revolution'. Keynes has invented new tools and techniques of economic analysis such as consumption function, multiplier, marginal efficiency of capital, liquidity preference, effective demand, etc. In the short run, it is assumed by Keynes that capital equipment, population, technical knowledge, and labour efficiency remain constant. That is why, according to Keynesian theory, volume of employment depends on the level of national income and output. Increase in national income would mean increase in employment. The larger the national income the larger the employment level and vice versa. That is why, the theory of Keynes is known as 'theory of employment' and 'theory of income'.

Theory

According to Keynes, the level of employment in the short run depends on aggregate effective demand for goods in the country. Greater the aggregate effective demand, the greater will be the volume of employment and vice versa. According to Keynes, the unemployment is the result of

deficiency of effective demand. Effective demand represents the total money spent on consumption and investment. The equation is:

Effective demand = National Income (Y) = National Output (O)

The deficiency of effective demand is due to the gap between income and consumption. The gap can be filled up by increasing investment and hence effective demand, in order to maintain employment at a high level.

According to Keynes, the level of employment in effective demand depends on two factors:

a) Aggregate supply function, and

b) Aggregate demand function.

(a) Aggregate supply function:

1. According to Dillard, the minimum price or proceeds which will induce employment on a given scale, is called the 'aggregate supply price' of that amount of employment.
2. If the output does not fetch sufficient price so as to cover the cost, the entrepreneurs will employ less number of workers.
3. Therefore, different numbers of workers will be employed at different supply prices.
4. Thus, the aggregate supply price is a schedule of the minimum amount of proceeds required to induce varying quantities of employment.
5. We can have a corresponding aggregate supply price curve or aggregate supply function, which slopes upward to right.

(b) Aggregate demand function

1. The essence of aggregate demand function is that the greater the number of workers employed, the larger the output. That is, the aggregate demand price increases as the amount of employment increases, and vice versa.
2. The aggregate demand is different from the demand for a product. The aggregate demand price represents the expected receipts when a given volume of employment is offered to workers.
3. The aggregate demand curve or aggregate demand function represents a schedule of the proceeds of the output produced by different methods of employment.

Determination of Equilibrium Level of Employment :

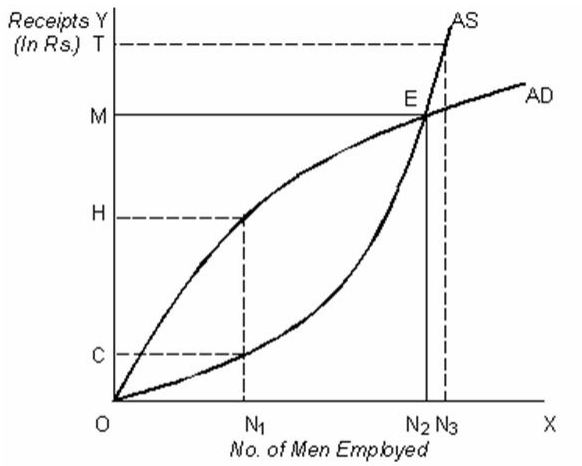


Fig.: Determination of Level of Employment

1. In the above diagram, AS curve shows the different total amounts which all the entrepreneurs, taken together, must receive to induce them to employ a certain number of men. If the entrepreneurs are convinced to receive OC amount of money, they will employ ON_1 number of labour.
2. The AD curve shows the different total amounts which all the entrepreneurs, taken together, expect to receive at different levels of employment. If they employed ON_1 level of employment, they expect to receive ON amount of proceeds from the total output.
3. At ON_1 level of employment, the economy is not in equilibrium. Because the total expected amount is greater than the total amount paid:

   OH > OC

4. The equilibrium level of employment is ON_2, as at this point the AD curve intersects the AS curve or the AD is just equal to AS. The amount of proceeds, i.e., OM which entrepreneurs expect to receive from providing ON_2 number of jobs is just equal

to the amount i.e. OM which they must receive if the employment of that number of workers is to be worthwhile for the entrepreneurs.

5. If the situation is such that the total amount of money expected to be received from the sale of output exceeds the amount that is considered necessary to receive, there will be competition among the entrepreneurs to offer more employment and thus, the employment will increase. On the left of N_2, AD is greater than AS, i.e., the amount expected to be received is greater than the amount considered necessary, there will be competition amount entrepreneurs to employ more labour.

6. Beyond the N_2, the AD curve lies below AS curve, which means that the amount expected by the entrepreneurs is less that the amount they considered necessary to receive. Therefore, the number of persons employed will be reduced in the economy.

7. The slope of AS curve, at first rises slowly and then after a point it rises sharply. It means that at beginning as more and more men are employed, the cost of output rises slowly. But as the amount received by the entrepreneurs increases they employ more and more men. As soon as the entrepreneurs start getting OT amount, they will be prepared to employ all of the workers.

8. The AD curve, in the beginning, rises sharply, but it flattens towards the end. This shows that in the beginning as more men are employed, the entrepreneurs expect to get sharply increasing amounts of money from the sale of the output. But after employment has sufficiently increased, the expected receipts do not rise sharply.

9. Effective demand is that aggregate demand price which becomes 'effective' because it is equal to aggregate supply price and thus represents a position of short-run equilibrium.

10. Effective demand also represents the value of national output because the value of national output is equal to the total amount of money received by the entrepreneurs from the sale of goods and services. The money received by the entrepreneurs from the sale of goods is equal to the money spent by the people on these goods. Hence the equation is :

Effective demand = National income

= Value of national output

= National expenditure

= Expenditure on consumption goods + Expenditure on investment goods

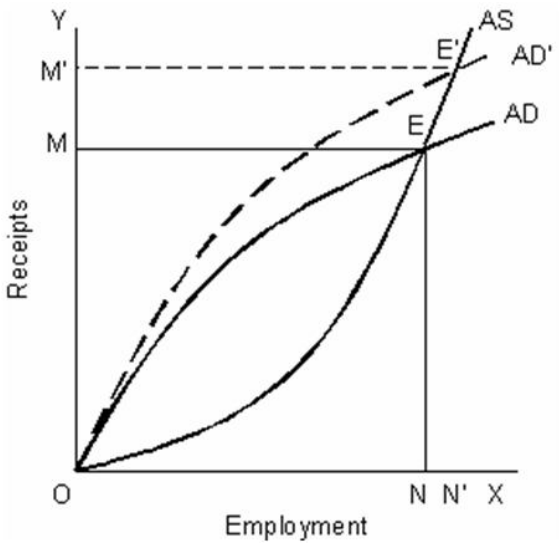
11. It is not necessary that the equilibrium level of employment is always at full employment level. Equality between AD and AS does not necessarily indicate the full employment level. It can be in equilibrium at less that full employment or an under-employment equilibrium.

12. Actually there is always some unemployment in the economy, even in economically advanced countries.

13. According to Keynes, full employment is the level of employment beyond which further increases in effective demand do not increase output and employment.

14. At the point of intersection of AS and AD, the entrepreneurs are maximising their profits. The profit will be reduced if volume of employment is more or less that this point. Even if the point does not represent full employment.

15. AD and AS will be equal at full employment only if the investment demand is sufficient to cover the gap between the AS price and consumption expenditure. The typical investment falls short of this gap. Hence the AD curve and AS curve will intersect at a point less than full employment, unless there is some external change.



16. In the above diagram, in this situation of aggregate supply (AS), ON' number of men were seeking employment, whereas only ON number of men could secure employment.

17. In this situation, the economy has not yet reached the full employment level, and there are still NN' number of workers unemployed in the economy.

18. If the favourable circumstances push the economy and the AD increases so much that the entrepreneurs now find it worthwhile to employ ON' men at the equilibrium point E', where the economy is in full employment level.

19. The situation in which the economy is in equilibrium at the level of full employment is called the 'optimum situation'.

20. The root cause of the under-employment equilibrium is the deficiency of AD. This deficiency is due to the fact that there is a gap between income and consumption. As income increases consumption increases but not proportionately. If the investment is increased sufficiently to cover this gap, there can be full employment. Hence the gap between income and consumption and insufficiency of investment to this gap are responsible for under-employment equilibrium.

5.4 INFLATION

5.4.1 Types

Q9. Define Inflation. Explain the various types of Inflation.

Ans : **(Aug.-21, Feb.-20, June-18, Jan.-18)**

Meaning

A continuous rise in the general price level over a long period of time has been the most common feature of both developed and developing economies. Persistent inflation is perhaps the control most serious macroeconomic problem confronting the world economy today – second only to hunger and poverty in the 'third world'. The persistent inflation and the problems associated with inflation have claimed more attention of the economists than any other macroeconomic problems.

Definition

Inflation means a considerable and persistent rise in the general level of prices over a long period of time.

Types

Accordingly, there are two kinds of inflation, viz.,

1. Demand-pull inflation, and
2. Cost-push inflation.

1. Demand-Pull Inflation

The demand-pull inflation occurs when the aggregate demand increases much more rapidly than the aggregate supply. The demand-pull inflation is caused by monetary and real factors.

(a) Demand-Pull Inflation due to Monetary Factors : An important reason of demand-pull inflation is increase in money supply in excess of increase in potential output. Monetary expansion in excess of increase i real output is one of the most important factors causing demand-pull inflation.

(b) Demand-Pull Inflation due to Real Factors : The real factors that cause demand-pull inflation are as follows,

i) Increase in government spending given the tax revenue.

ii) Cut in tax rates without change in the government expenditure.

iii) Upward shift in the investment function.

iv) Downward shift in the investment function.

v) Upward shift in export function and

vi) Downward shift in the import function.

Demand-pull inflation represents a situation where the basic factor at work is the increase in aggregate demand for output either from the government or the entrepreneurs or the households. The result is that the pressure of demand in such that it cannot be met by the currently available supply of output.

Keynes explained that inflation arise when there occurs as inflationary gap in the gap in the economy which comes to exist when aggregate demand exceeds aggregate supply at full employment level of output. Basically, inflation is caused by a situation whereby the pressure of aggregate demand for goods and services exceeds the available supply of output (both being counted at the prices ruling at the beginning of a period).

In such a situation, the rise in price level is the natural consequence. Now, this imbalance between aggregate demand and supply may be the result of more than one force at work. As we know aggregate demand and supply may be the result of more than one force at work.

As we know aggregate demand is the sum of consumers' spending on consumer foods and services, government spending on consumer goods and services and net investment being contemplated by the entrepreneurs.

2. Cost-Push Inflation

The cost-push inflation is caused by the monopoly power exercised by some monopoly groups of the society, like labour unions and firms in monopolistic and oligopolistic market setting. The cost-push inflation may be classified on the basis of supply-side factors as follows,

a. Wage-push inflation

b. Profit-push inflation, and

c. Supply-shock inflation.

(a) Wage-push Inflation : Wage-push inflation is attributed to the exercise or monopoly power by labour unions to get the money wages enhanced above the competitive labour market wage rate. The logic of wage-push inflation is simple. Labour unions exercise their monopoly power and force firms, the employers, to increase their money wages above the competitive level without a matching increase in labour productivity.

(b) Profit-push Inflation : Another supply-side factor that is said to cause inflation is the use of monopoly power by the monopolistic and oligopolistic firms to enhance their profit margin, which causes rise in price and inflation. It is important to note here that the existence of monopolistic and oligopolistic firms and the use of their monopoly power to increase their prices is a necessary condition for profit-push inflation.

(c) Supply-shock Inflation: Another variant of cost-push inflation is the supply-shock inflation. Supply shock is a sudden, unexpected disturbance in the supply position of some major commodities or key industrial inputs. The supply-shock inflation occurs generally due to sudden rise in the prices of high-weightage items in the price index number, for instance, food prices due to a crop failure, and prices of some key industrial inputs like, coal, steel, cement, oil and basic chemicals.

Q10. What are the causes of inflation?

Ans : **(Aug.-21, Feb.-20, June-18, Jan.-18)**

Inflation means there is a sustained increase in the price level. The main causes of inflation are either excess aggregate demand (economic growth too fast) or cost push factors (Supply side factors). The main cause of inflation is the increase in the demand of goods and services and at the same time decrease in the supply of goods and services.

1. Demand pull inflation

If the economy is at or close to full employment then an increase in AD leads to an increase in the price level. As firms reach full capacity, they respond by putting up prices leading to inflation. AD can increase due to an increase in any of its components C+I+G+X-M

The link between output and inflation suggests that there will be a similar link between inflation and unemployment, The Phillips curve initially showed a link between money wages and unemployment, it was then argued an increase in wages would lead to inflation

Factors affecting demand are as under:

i) Taste and preferences

ii) Seasonal demand

iii) Natural calamities

iv) Price of substitute goods

v) Increase in money supply

vi) Increase in consumer spending

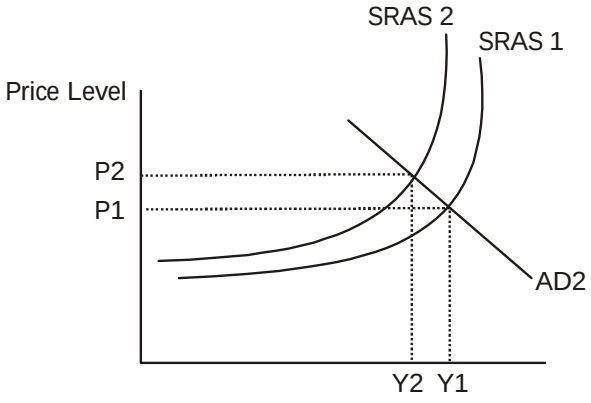
vii) Cheap monetary policy

viii) Black Money

ix) Increase in public expenditure

2. Cost Push Inflation

If there is an increase in the costs of firms, then firms will pass this on to consumers. There will be a shift to the left in the AS.



Cost push inflation can be caused by many factors

1. The Labour Market

If trades unions can present a common front then they can bargain for higher wages, this will lead to wage inflation.

2. Import prices

One third of all goods are imported in the UK. If there is a devaluation then import prices will become more expensive leading to an increase in inflation

3. Raw Material Prices

The best example is the price of oil, if the oil price increase by 20% then this will have a significant impact on most goods in the economy and this will lead to cost push inflation.

E.g. in early 2008, there was a spike in the price of oil to over $150 causing a rise in inflation.

4. Profit Push Inflation

When firms push up prices to get higher rates of inflation.

5. Declining productivity

If firms become less productive and allow costs to rise, this invariably leads to higher prices.

5.4.2 Control Technique of Inflation

Q11. Discuss in detail the measure to control inflation.

Ans : **(Aug.-21, Jan.-18)**

Economists presume that if inflation cross the stage of creeping inflation, it is based and can often prove disastrous. Thus, it must be kept under control.

The various anti-inflation measures are generally classified as follows,

i) Monetary measures

ii) Fiscal measures

iii) Price and wage control.

(i) Monetary Measures

Monetarists believe that inflation is a monetary phenomenon. It is emerged is the monetary sector because of increase in money supply. Therefore, the monetarists believe that control of money supply through an appropriate monetary policy is capable in controlling demand-pull inflation. The monetary measures to control inflation are divided into traditional and non-traditional measures.

(a) Traditional Monetary Measures : The traditional measures are further sub-divided into the following measures,

- Bank rate policy
- Variable reserve ratio
- Open market operation.

➢ **Bank Rate Policy :** In developed money markets, the main device for monetary control is the bank rate policy. The bank rate forms the basis of lending rate charged by the banks.

The bank rate, as a measure of monetary control, works in two ways,

Firstly, the central bank increases the bank rate. This leads to an increase in the cost of borrowings and thus reduces bank's ability to lend money. As a result, flow of money from the commercial banks to the public reduces. Hence, the rise in price is halted to the degree to which credit money is the case.

Secondly, in a developed money market, the bank rate sets the tendency for the general market rate of interest, especially in short-term money market. Thus, when there is a change in the bank rate, other rate of interests move in the same direction take for instance, if bank rate is increased, other market rates also increase. Thus, the cost of lending goes up. This decreases the monetary flows from banks to the public.

➢ **Variable Reserve Ratio :** The Cash Reserve Ratio(CRR) acts as a weapon to control money supply. To control inflation the central bank raise the CRR. It leads to reduction in the lending capacity of the commercial banks. As a result, flow of money from commercial banks to public decreases.

Hence, the rise in price is halted to the degree to which bank credit is the case.

➢ **Open Market Operations :** It refers to the purchase of government securities and debts by the central bank to and from the public. To control inflation, the central bank sells the government securities to the public through commercial banks. The central bank takes away a part of deposits by selling the government securities in the market. This leads to a reduction in the credit creation capacity of the commercial banks.

(b) Non-traditional Measures : The non-traditional methods of monetary control used by RBI are as follows.

a) Statutory Liquidity Ratio (SLR)

b) Selective credit controls

c) Moral suasion

d) Credit authorization scheme.

(ii) Fiscal Measures

The fiscal measures for controlling inflation depends on the cause of excess demand. The measure here is to cut down the public expenditure when exceeds demand is caused by government expenditure in excess of real output.

A cut down in public expenditure leads to a decrease in the government demand for goods and services and reduction of private consumption expenditure through a process of reverse multiplies. Thus, the excess demand decreases more than a given cut in public expenditure.

(iii) Price and Wage Control

Price control, as a measure to control inflation, is used during the was period and even during the peace period. The main aim of price control is to top the rise in price of scarce goods and allocate the use of commodity. In order to make

sure a fair distribution of the scarce commodities, allocation system is adopted. Under the price control system, selling good more than the fixed price is declared as a cognizable offence.

Wage control, as a measure to control inflation, is used when wages tend to rise much faster than the productivity. To control inflation, the government controls the wage rise directly by imposing a ceiling on the wage income in both private and public sectors.

Q12. Explain the various stages of Inflation.

Ans :

1. Pre-Full Employment Stage

Inflation before full employment is beneficial to the economic development of a country. It has been noticed that the rate of increase in prices is not more than 3 per cent per annum. The supply of money causes increase in the national income, which induces more production. Consequently more employment is available. Thus, unused resources are being fully employed under this stage.

This stage of inflation is also called partial or semi-inflation. So long as full employment is not reached, any increase in the quantity of money is exhausted in raising the level of employment and output and not the general price-level in the economy.

Due to bottlenecks in the economy, an increase in money supply may cause cost and prices to rise more than the expansion of output and employment. This is the reason why it is also called bottleneck-inflation till the ceiling of full employment is reached.

2. Full Employment Stage

Upto this stage all the resources of production are fully employed. Production is optimum at this stage. The laws of constant return are observed. Production is unable to expand because all the unused factors are fully employed. There does not exist any chance of further employment. If the quantity of money increases, the prices continue to increase because the volume of production cannot increase. This state of inflation is not very troublesome because the prices can rise only when the quantity of increases. The rate of increase in prices is not more than 10 per cent annum.

3. Post-Full Employment Stage

After the full employment has been attained, subsequent increase in the aggregate effective demand due to increase in the quantity of money causes substantial increase in the general price level. Prices rise without any rise in the production and employment. Inflation after full employment is not due to monetary phenomenon but due to phenomenon of full employment. Inflation existed even before full employment, but it was not so severe.

The rate of increase in price-level is more than 10 percent. Due to existence of multiplier it goes up very rapidly. Inflation becomes severe due to inflation psychology. It is also called true inflation because the production does not increase while the quantity of money increases.

The real inflation is caused as a result of increases in the quantity of money after full employment. Full employed economy is highly inflation.

5.5 Fiscal Policies

Q13. Define Fiscal Policy. Explain the nature of Fiscal Policy.

Ans :

Meaning

Fiscal policy represents the government policy related to tax and expenditure. It is a type of economic policy which controls and regulates the tax system, expenditure, borrowings and public debt management within a country.

The main focus of fiscal policy is on the flow of money in a particular economy. The process of monetary flow is initiated by the private sector which is generally transferred to the government. The government utilises these funds in the welfare of the economy. Private sector uses taxation as a

channel for diverting funds to government, and these funds go back to the economy through the public expenditure. Another important concern in fiscal policy is public debt management. Governmental loans, interest payment and retirement of matured debts, all come under public debt management. Fiscal policy, thus, proved to be very crucial for the national economy.

The role of fiscal policy differs according to the requirements of a country. Developed countries use fiscal policy as a tool to increase employment and maintain economic stability. While, underdeveloped countries use fiscal policy to boost the economic growth.

Definitions

(i) According to Buehler, "By fiscal policy is meant the use of public finance or expenditure, taxes, borrowing and financial administration to further our national economic objective".

(ii) According to Arthur Smithies, "Fiscal policy is a policy under which government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on the national income, production, and employment".

Nature

The following are the main features of fiscal policy of India

1. Rationalisation of Product Classification Codes

A very welcome change brought about for administrative convenience is the adoption of a rationalised standard product code structure for indirect taxes. The change has resulted in reduced disputes and litigations about product classification.

2. Common Accounting Year for Income Tax

Taxation policy has adopted standard accounting year (April-March) for the purpose of income tax. The change is intended to reduce the malpractices and raise tax revenues.

3. Long-Term Fiscal Policy

Since 1986 budget, the Government of India has introduced long-term fiscal policy to provide greater certainties in its budgetary policies and to improve the over all environment of business.

4. Impact on Rural Employment

Generation of employment has been an important objective of fiscal policy. The Government of India has introduced new employment schemes like Jawahar Rozgar Yojna or strengthened the existing schemes like Integrated Rural Development Program or National Rural Employment Program.

5. Black Money

Unaccounted money has been a constant feature of India's economy. Fiscal measures have generally failed to reduce the creation of black money. Schemes like Voluntary Disclosure, Bearer Bonds or Indira Vikas Patra have had marginal impact on the incidence and growth of black money.

6. Reliance on Indirect Taxes

The tax policy is increasingly becoming regressive in nature by large dependence on indirect taxes like excise duty or custom duty as compared to that on direct taxes like income taxes, corporation tax, capital gains tax, etc.

7. Inadequate Public Sector Contribution

Contrary to repeated assertion by the Government of India, public sector continues to be a drain on the meager resources of the government. Plan schemes of finance have expected sizable contribution from public sector, which has not materialised in most cases.

8. Introduction of MODVAT

In 1986 the introduction of MODVAT has helped to reduce the cumulative impact of indirect taxes on manufactured products. Under MODVAT the manufacturer while charging full rate of excise duty on his output, gets credit for tax paid on inputs. This reduces the cascading effect of excise duty.

9. Inflationary Potential

With large budget deficits, indirect taxes, shortages, black money and rising money incomes, inflationary trend in economy has been remarkable. The fiscal policy instead of being a cure of inflation has become the cause of inflation.

Q14. What are the objectives of Fiscal Policy.

Ans :

1. Development by effective Mobilisation of Resources

The principal objective of fiscal policy is to ensure rapid economic growth and development. This objective of economic growth and development can be achieved by Mobilisation of Financial Resources. The central and the state governments in India have used fiscal policy to mobilise resources. The financial resources can be mobilised by:

(i) Taxation: Through effective fiscal policies, the government aims to mobilise resources by way of direct taxes as well as indirect taxes because most important source of resource mobilisation in India is taxation.

(ii) Public Savings: The resources can be mobilised through public savings by reducing government expenditure and increasing surpluses of public sector enterprises.

(iii) Private Savings: Through effective fiscal measures such as tax benefits, the government can raise resources from private sector and households. Resources can be mobilised through government borrowings by ways of treasury bills, issue of government bonds, etc., loans from domestic and foreign parties and by deficit financing.

2. Efficient Allocation of Financial Resources

The central and state governments have tried to make efficient allocation of financial resources. These resources are allocated for Development Activities which includes expenditure on railways, infrastructure, etc. While Non-development Activities includes expenditure on defence, interest payments, subsidies, etc. But generally the fiscal policy should ensure that the resources are allocated for generation of goods and services which are socially desirable. Therefore, India's fiscal policy is designed in such a manner so as to encourage production of desirable goods and discourage those goods which are socially undesirable.

3. Reduction in Inequalities of Income and Wealth

Fiscal policy aims at achieving equity or social justice by reducing income inequalities among different sections of the society. The direct taxes such as income tax are charged more on the rich people as compared to lower income groups. Indirect taxes are also more in the case of semi-luxury and luxury items, which are mostly consumed by the upper middle class and the upper class. The government invests a significant proportion of its tax revenue in the implementation of Poverty Alleviation Programmes to improve the conditions of poor people in society.

4. Price Stability and Control of Inflation

One of the main objectives of fiscal policy is to control inflation and stabilise price. Therefore, the government always aims to control the inflation by reducing fiscal deficits, introducing tax savings schemes, Productive use of financial resources, etc.

5. Employment Generation

The government is making every possible effort to increase employment in the country through effective fiscal measure. Investment in infrastructure has resulted in direct and indirect employment. Lower taxes and duties on small-scale industrial (SSI) units encourage more investment and consequently generate more employment.

6. Balanced Regional Development

Another main objective of the fiscal policy is to bring about a balanced regional development. There are various incentives from the government for setting up projects in backward areas such as Cash subsidy, Concession in taxes and duties in the form of tax holidays, Finance at concessional interest rates, etc.

7. Reducing the Deficit in the Balance of Payment

Fiscal policy attempts to encourage more exports by way of fiscal measures like exemption of income tax on export earnings, exemption of central excise duties and customs, exemption of sales tax and octroi, etc. The foreign exchange is also conserved by providing fiscal benefits to import substitute industries, imposing customs duties on imports, etc. The foreign exchange earned by way of exports and saved by way of import substitutes helps to solve balance of payments problem. In this way adverse balance of payment can be corrected either by imposing duties on imports or by giving subsidies to export.

Q15. State the significance of Fiscal Policy.

Ans :

The significance of fiscal policy may be understood with the help of following factors:

1. Full Employment

A condition when there is an availability of jobs for everyone who want to work at the existing wage rate and are fit for it, is known as full employment. Fiscal policy plays a crucial role in attaining full employment.

According to Keynes, full employment can be achieved through:

(i) Taxation: Fiscal policy uses taxation as a tool to facilitate consumption and investment, which helps in creating more employment opportunities. For generating required level of savings and investments, direct taxes should be lowered.

(ii) Public Expenditure: It plays a compensatory role for increasing the level of aggregate demand, investment, and employment. A deliberate public expenditure helps in financing public works, programmes and providing measures for social security.

(iii) Public Borrowings: It should be on a large scale to finance productive public expenditure.

(iv) Deficit Financing: To raise the level of effective demand and to overcome depressionary forces, budget should be in deficit and it should have deficit financing.

2. Economic Stabilisation

Fiscal policy also helps to gain economic stabilisation. Economic stabilisation aims to provide full employment by maintaining relative stability in the price level. In a nutshell, fiscal policy is considered as a combination of economic growth and stability. While restricting inflation, forces stimulating growth should be triggered. In the construction of infrastructures and heavy industries for economic development, large amount of funds are invested for long term which leads to delay in returns due to the lack of consumption goods. This results in rise in price spiral. This type of situation is cured by fiscal policy using different measures.

3. Economic Growth

Another significance of fiscal policy is its ability to facilitate economic growth. Economic growth helps in developing a nation. Poverty factor is the most crucial barrier in economic growth which can be counteracted by applying an appropriate fiscal policy.

Fiscal policy works as a mean of encouraging economic growth to achieve certain objectives, such as:

(i) To recognise and employ potential resources by converting to channels of production. Under fiscal policy, this can be realised by increasing the tendency to save, thereby increasing the saving ratio. **According to Prof. Tripathy,** some tools can be used to improve the ratio of savings:

(a) Imposition of additional taxes,

(b) Direct physical control,

(c) Revenue of public enterprises,

(d) Increase in the rates of taxation,

(e) Public debt, and

(f) Deficit financing.

(ii) To speed up the growth rate of economy without negatively affecting the willingness to work.

(iii) Provides support for private sector investments and recommend suitable channels for investment.

(iv) Performs general economic welfare through equity in distribution and poverty reduction.

4. Social Justice

A welfare state should provide social justice by giving equitable distribution of income and wealth. Fiscal policy can serve as an effective means of achieving this much desired goal of socialism in developed as well as developing countries. Progressive tax system can be of much use in realising this objective. Moreover, public expenditure helps in redistributing income from the rich to the poor section of the society. Fiscal policy insists that in a budget, growing allocation should be made for programs like free medical care, free education, subsidised housing, subsidised essential commodities like milk, etc. Thus, it follows that the objectives of fiscal policy are not conflicting but complementary to each other. Fiscal policy focuses on providing social justice to every individual of the economy.

Q16. State the instruments of Fiscal Policy.

Ans : **(Imp.)**

The main instruments used in fiscal policy are as follows:

1. Taxation

The major instrument of fiscal policy of any economy is the taxation system. A well-designed taxation system facilitates or restricts the level of consumption and investment. Taxation system of the government helps in fighting depression and unemployment by stimulating both consumption and investments. There are mainly two types of taxes: direct and indirect.

(i) Direct Taxes: Taxes which are charged directly from the income or wealth of an individual.

(ii) Indirect Taxes: Taxes which are charged from individual's expenditure or outlay.

For effective taxation system, balance between direct and indirect taxes should be maintained.

2. Public Expenditure

Public expenditure is that instrument of fiscal policy which deals with government spending for public welfare, wages and salaries of government employees, public health and security, investment and allowances, etc. With the expandable resources, it is vital to design the composition of public spending. The final effect of public spending depends on the well-designed public expenditure.

3. Public Borrowing

Fiscal policy of any economy uses public borrowing or debt management as a tool to manage surplus liquidity available with public. The change of level of consumption and investment makes it better than taxation. It helps in generating additional incentives. Through public borrowing, the fiscal policy is

able to divert resources from unproductive to productive, resulting in economic growth of the country. This instrument is also used to develop funds for welfare projects like modernisation of railways, methods for power generation and introducing irrigation schemes.

Q17. State the advantages and disadvantages of Fiscal Policy.

Ans : **(Imp.)**

Advantages

The main advantages of fiscal policy are as follows:

1. Inducement to Private Sector

Fiscal policy of India has provided incentives to private sector for investment and production by several measures. To set up industries in backward areas, several tax concessions have been given.

2. Mobilisation of Resources

Fiscal policy has also helped mobilisation of resources. To execute the plans, resources have mainly been provided by internal resources. By making use of measures like taxes, savings, public debt, etc. government has mobilised sufficient resources for the projects necessary for economic development. In third five year plan 72 per cent resources were mobilised for plan through internal resources. In eleventh five year plan percentage of internal resources to finance the plan rose to 100 per cent.

3. Incentives for Savings

Fiscal policy has provided several incentives for savings to household and corporate sectors. To encourage savings in the household sector, several concessions are tax exemptions have been given on life insurance, NSCs, Kisan Vikas Patra, Provident Fund, Infrastructure Bonds, etc. Tax concessions have also been allowed to corporate sector to enable them to save more and to replough their profits.

4. Development of Public Enterprises

Fiscal policy has been providing finance for development of public enterprises. These public enterprises have been set up in the area of basic and heavy industries. Establishment of basic and heavy industries involves great deal of risk and huge capital investment. So private sector hesitates in setting up these industries. These industries have played significant role in the industrial development of our nation. Public enterprises have promoted infrastructure like railways, power, ports, roads, dams, etc.

5. Social Welfare

Through fiscal policy government spends huge amount on public health, education, safe drinking water, welfare of weaker sections of society, child welfare, woman welfare, welfare of aged persons, etc. All this has promoted social welfare in the economy.

6. Alleviation of Poverty and Generation of Employment Opportunities

Fiscal policy has been endeavouring to alleviate poverty. With a view to providing employment to the poor people of the country and to enhancing their level of income, considerable public expenditure was incurred on several programmes initiated in this respect e.g. 20-point programme, Integrated Rural Development Programme, Jawahar Rozgar Yojana, Prime Minister Rozgar Yojana, National Rural Employment Guarantee Act, etc. Public expenditure on these programmes has directly influenced the living standard of the poor population. Subsidy given by the government on food, kerosene oil, LPG, etc. has also benefitted the poor people.

7. Reduction in Inequality of Income and Wealth

Fiscal policy has also endeavoured to reduce inequality of wealth and income. By way of progressive income tax, high rates of taxes on luxuries, wealth tax, etc. government has mobilized resources from the rich class and has utilized the same on the welfare schemes

meant for the poor. The poor are exempted from the payment of income tax if their income is upto a certain limit. Besides, several fiscal concessions like exemption from taxes, grant of subsidies, etc., have been given for the industrial development of backward areas. The objective is to reduce regional disparities.

8. Export Promotion

Government has made use of fiscal policy for promoting export. The exporters of certain categories have been exempted from income tax. Certain exports enjoy several concessions and cash subsidies. Rate of import duty on raw materials and capital goods used for the production of export goods has been reduced.

Disadvantages

The main disadvantages of fiscal policy are as follows:

1. Inflation

Deficit financing has proved inflationary. Deficit financing results in increase in money supply, which results in fall in the value of money and in turn leads to rise in prices.

2. Defective Tax Structure

In India share of direct taxes is less than the share of indirect taxes. Such tax structure proves burdensome for the poor. Indirect taxes like excise duty, value added tax, service tax, etc. are charged at the same rate from rich as well as poor sections of society. It badly affects the poor section of our society. Moreover, agriculture income is still tax free, although some of the big farmers are earning the huge income. Salaried class bears the huge burden of tax.

3. Poor Tax Administration

Indian tax administration has been very poor. Because of poor administration, there is enormous tax-evasion. There are various loopholes in our taxation policy, because of which business class can evade tax. Poor tax administration has failed to check black money.

4. Inequality of Income

Fiscal policy has failed to check inequality of income. Because of defective indirect tax system, the poor class has to bear the burden of indirect taxes like the rich class. It has adversely affected the poor segment. On the other hand, direct taxes like gift tax, death duty which have no effect on poor have been withdrawn. Upper limit of wealth tax has been raised. All this has resulted in increasing the wealth and income inequality.

5. Failure of Public Sector

Various public sector units are running at losses. Huge investment in public enterprises has failed to generate adequate return on this investment. Some public sector undertakings have failed to pay even interest on the capital invested therein.

6. Increase in Non-development Expenditure

In fiscal policy government is spending huge amount on non-development expenses like defence expenses, election expenses, subsidies, foreign travels, interest payments, grants to states/UTs, etc. These expenses are of unproductive nature and put undue burden on government exchequer. Fiscal policy has failed to control non-development expenditure.

7. Failed to Check Regional Disparities

Regional disparity refers to unequal development of different regions/states. Fiscal policy has failed in reducing regional disparities. Although some tax rebates and tax concessions are offered for investment in backward or rural areas but still a lot is yet to be done.

8. Increasing Interest Burden

Under fiscal policy government has taken huge public debt both from internal and external sources.

5.6 BUDGET

Q18. Define budget. What are the objectives of budget?

Ans :

Introduction

Budget is an Annual Financial Statement of yearly estimated receipts and expenditures of the government in respect of every financial year.

Budgeting is the process of estimating the availability of resources and then allocating them to various activities according to a pre-determined priority.

Budgets act as instruments of control and act as a benchmark to evaluate the progress of various departments.

Definitions

(i) **According to In simple words**, "budget is the yearly financial description and the estimate for the expenditure and revenue of coming years".

(ii) **According to Prof. Dalton's** thought is that." The normal thought of balanced budget is that there is a gain in the income in a time period or it is not less in comparison of expenditure."

(iii) **According to In Prof. Taylor's** words," Budget is the most important financial plan of the government. Budget, presents combine the sured income and proposed expenditure's estimate for budget year."

Objectives

On the basis of budget, attempts have been made to achieve many targets. Following are the main objectives:

1. Prepare budget structure for policy. For this, to achieve the targets, the work that will have to be done, takes the decision regarding this. This decision is to be taken that from different competitional optional proposals which one is to be choose so that, main national targets can be obtained. It is to be decided that can many targets be achieved combine.
2. Budget is a medium to implement a policy. Here standard of work capacity and thriftiness has been implemented, means they try to get policy making regarding decisions on minimum estimate.
3. Budget is a medium of implementation. All decisions regarding budget take a form of act. The reason to pressurise the law control is to stop the misuse of rights and to save public fund from misuses.
4. Budget documents can be sources of providing information about the coming possibilities, activities of past, present decisions and future possibilities budget process provide offers for legislatives and executives that they can tell us the appropriateness of their decisions and functions.

Q19. What are the components of budget?

Ans :

The budget comprises of the

(A) Revenue Budget

(B) Capital Budget

(A) Revenue Budget

The Revenue Budget shows the current receipts of the government and the expenditure that can be met from these receipts.

1. Revenue Receipts

Revenue receipts are divided into tax and non-tax revenues.

- **Tax revenues:** Tax revenues consist of the proceeds of taxes and other duties levied by the central government.

  Tax revenues, an important component of revenue receipts, comprise of

- **Direct taxes:** which fall directly on individuals (personal income tax) and firms (corporation tax),
- **Indirect taxes:** like excise taxes (duties levied on goods produced within the country), customs duties (taxes imposed on goods imported into and exported out of India) and service tax.

2. Non-tax revenue

Of the central government mainly consists of Interest receipts (on account of loans by the central government which constitutes the single largest item of non-tax revenue)

- Dividends and profits on investments made by the government
- Fees and other receipts for services rendered by the government.
- Cash grants-in-aid from foreign countries and international organizations are also included

The estimates of revenue receipts take into account the effects of tax proposals made in the Finance Bill.

A Finance Bill, presented along with the Annual Financial Statement, provides details of the imposition, abolition, remission, alteration or regulation of taxes proposed in the Budget.

3. Revenue Expenditure

Revenue expenditure consists of all those expenditures of the government which do not result in creation of physical or financial assets.

It relates to those expenses incurred for the normal functioning of the government departments and various services, interest payments on debt incurred by the government, and grants given to state governments and other parties (even though some of the grants may be meant for creation of assets).

Budget documents classify total revenue expenditure into Plan and Non-plan expenditure

- **Plan revenue expenditure -** Plan revenue expenditure relates to central Plans (the Five-Year Plans) and central assistance for State and Union Territory Plans.
- **Non-plan expenditure-** Non-plan expenditure, the more important component of revenue expenditure, covers a vast range of general, economic and social services of the government. The main items of non-plan expenditure are interest payments, defence services, subsidies, salaries and pensions. Interest payments on market loans, external loans and from various reserve funds constitute the single largest component of non-plan revenue expenditure. They used up 41.5 per cent of revenue receipts in 2004-05. Defence expenditure, the second largest component of non-plan expenditure, is committed expenditure in the sense that given the national security concerns, there exists a little scope for drastic reduction.
- **Subsidies** are an important policy instrument which aim at increasing welfare. Apart from providing implicit subsidies through under-pricing of public goods and services like education and health, the government also extends subsidies explicitly on items such as exports, interest on loans, food and fertilizers.

(B) The Capital Budget

The Capital Budget is an account of the assets as well as liabilities of the central government, which takes into consideration changes in capital. It consists of capital receipts and capital expenditure of the government. This shows the capital requirements of the government and the pattern of their financing.

1. Capital Receipts

The main items of capital receipts are loans raised by the government from the public which are called market borrowings, borrowing by the government from the Reserve Bank and commercial banks and other financial institutions through the sale of treasury bills, loans received from foreign governments and international organizations, and recoveries of loans granted by the central government.

Other items include small savings (Post-Office Savings Accounts, National Savings Certificates, etc.), provident funds and net receipts obtained from the sale of shares in Public Sector Undertakings (PSUs).

2. Capital Expenditure

This includes expenditure on the acquisition of land, building, machinery, equipment, investment in shares, and loans and advances by the central government to state and union territory governments, PSUs and other parties. Capital expenditure is also categorized as plan and non-plan in the budget documents.

- **Plan capital expenditure**, - Plan capital expenditure, like its revenue counterpart, relates to central plan and central assistance for state and union territory plans.
- **Non-plan capital expenditure-** Non-plan capital expenditure covers various general, social and economic services provided by the government.

5.7 CURRENT BUDGET

Q20. Explain the union budget of 2021-22 analysis.

Ans :

- **Expenditure:** The government proposes to spend Rs 34,83,236 crore in 2021-22. As per the revised estimates, the government spent Rs 34,50,305 crore in 2020-21, 13% higher than the budgetestimate.
- **Receipts:** The receipts (other than borrowings) are expected to be Rs 19,76,424 crore in 2021-22, which is 23% higher than the revised estimates of 2020-21. In 2020-21, revised estimates for receipts were 29% lower than budget estimates. Given the impact due to COVID-19, it is useful to see the growth from 2019-20, an annual increase of 6%.
- **GDP growth**: Nominal GDP is expected to grow at of 14.4% (i.e., real growth plus inflation) in 2021-22.
- **Deficits:** Revenue deficit is targeted at 5.1% of GDP in 2021-22, which is lower than the revised estimate of 7.5% in 2020-21 (3.3% in 2019-20). Fiscal deficit is targeted at 6.8% of GDP in 2021-22, down from the revised estimate of 9.5% in 2020-21 (4.6% in 2019-20). The government aims to steadily reduce fiscal deficit to 4.5% of GDP by 2025-26.
- **Ministry allocations:** Among the top 13 ministries with the highest allocations, the highest annual increase over 2019-20 is observed in the Ministry of Jal Shakti (64%), followed by the Ministry of Consumer Affairs, Food and Public Distribution (48%) and the Ministry of Communications (31%).

1. Main tax proposals in the Finance Bill

- No changes in income tax rates for individuals and corporations.
- **Limit on tax-free Income from provident funds:** Tax exemption on the interest income on the employees' contributions to provident funds will be limited up to Rs 2.5 lakh.
- **Extensions on tax incentives by a year upto the end of fiscal 2021-22**: This includes tax deduction upto Rs 1.5 lakh on interest on housing loan, and tax holiday for affordable housing projects, profits of startups, and investing capital gains in start-ups.
- **Agriculture and Infrastructure Develop-ment Cess:** The cess will be levied on some imported items including gold, silver, alcoholic beverages, coal, and cotton, and basic customs duty will be reduced by an equal amount. The cess will be levied on petrol and diesel at the rate of Rs 2.5 and Rs 4 per litre respectively, with equivalent cuts in excise duty. As the cess is not part of the divisible pool of revenue shared with states, their revenue receipts will be adversely affected.
- **Changes in customs duty:** The duty has been increased on some items such as cotton, silk, some auto and mobile parts.

- **"Mini-budget" announcements made earlier:** The safe harbour threshold for real estate transactions above the circle rate increased from 10% to 20%. Encashment of leave travel concession will be exempt from tax if the amount is used for purchasing certain goods.
- **Reduction in time for income tax proceedings:** Time limit for the re-opening of income tax assessment will be reduced from 6 years presently to 3 years.
- **Exemption from audit:** Businesses which carry 95% of their transactions digitally and whose turnover is less than five crore rupees, are exempted from keeping audited accounts. The threshold will be increased to Rs 10 crore.

2. Non-Tax proposals in the Finance Bill

- **There are some items that may not meet the Money Bill definition:** These are listed below.
- **LIC Act, 1956:** Amended to create a board of directors, issue shares, reduce government shareholding upto 51% of equity (minimum 75% in the first five years), cap voting rights at 5% to shareholders other than central government.
- **Securities Contracts (Regulations) Act, 1956:** Amended to allow pooled investment fund which collects money from investors. They may borrow money or issue debt securities. Consequential amendments made in the SARFAESI Act, 2002 and in the Recovery of Debts due to Banks and Financial Institutions Act, 1993.
- **SEBI Act, 1992:** Amended to require registration by Alternative Investment Trusts and Business Trusts.

3. Policy Highlights

- **Legislative Changes:** A Securities Markets Code will be introduced to consolidate four Acts including the SEBI Act, 1992 and the Government Securities Act, 2007. The Insurance Act, 1938 will be amended to increase the permissible FDI limits in insurance companies from 49% to 74%, and allow foreign ownership and control with safeguards. The Companies Act, 2013 will be amended to revise the definition of small companies by increasing threshold for paid up capital (from Rs 50 lakh to Rs 2 crore) and annual turnover (from Rs 2 crore to Rs 20 crore). Certain offences under the Limited Liability Partnership Act, 2008 will be decriminalised. The Deposit Insurance and Credit Guarantee Corporation Act, 1961 will be amended to ensure that depositors get time-bound and easy access to their deposits to the extent of their insurance cover. The minimum loan size for NBFCs to be eligible for debt recovery under the SARFAESI Act, 2002 will be reduced from Rs 50 lakh to Rs 20 lakh.
- **Disinvestment:** Disinvestment of Air India, IDBI Bank, and Pawan Hans will be completed in 2021-22. Legislative amendments will be introduced to privatise two public sector banks and a General Insurance company. The IPO for LIC will also be completed in 2021-22. The government has approved a strategic disinvestment policy under which CPSEs will be maintained only in four sectors, with the rest being privatised. States will be incentivised to disinvest their public sector companies. A Special Purpose Vehicle will be used to monetise government owned land.
- **Finance:** An Asset Reconstruction Company Limited and Asset Management Company will be set up to consolidate and take over existing stressed debt, and manage and dispose

assets. An institutional framework will be created for the corporate bond market to instil confidence among participants and enhance liquidity of secondary markets. An investor charter will be introduced for financial investors across all products.

- **Corporate Affairs:** Alternate methods of debt resolution and special frameworks for MSMEs will be introduced. A Conciliation Mechanism will be set up for quick resolution of contractual disputes.
- **Commerce and Industry:** Seven textile parks will be established over three years to create infrastructure and increase exports. Incorporation of one-person companies will be encouraged by regulatory changes such as removal of restrictions on paid up capital and turnover, and NRIs will be allowed to establish such companies.
- **Labour and Employment:** A portal to collect information on gig workers, and construction workers, among others will be launched to help frame schemes on health, housing, insurance, and others for migrant unorganised workers. The Apprenticeship Act will be amended to enhance apprentice-ship opportunities.
- **Health and Nutrition**: PM Atma Nirbhar Swasth Bharat Yojana will be launched to develop capacity of health systems, strengthen national institutions, and create institutions to detect and cure new and emerging diseases. Mission Poshan 2.0 will be launched after merging Supplementary Nutrition Programme and the Poshan Abhiyan to strengthen nutrition outcomes. The National Nursing and Midwifery Commission Bill will be introduced.
- **Education:** Legislation to set-up a Higher Education Commission of India will be introduced, having vehicles for standard-setting, accreditation, regulation, and funding. A grant to create formal umbrella structures for institutes of higher education in nine cities will be created. More than 15,000 schools will be strengthened to include all components of the National Education Policy and subsequently mentor other schools to achieve ideals of Policy.
- **Infrastructure and Real Estate:** A Bill to establish a Development Financial Institution for infrastructure financing will be introduced. The DFI will be used to establish a lending portfolio of at least five lakh crore rupees for financing infrastructure projects. A National Monetisation Pipeline of potential infrastruc-ture assets such as dedicated freight corridor assets of the railways will be launched. Debt financing of real estate and infrastructure investment trusts by foreign portfolio investors will be enabled to ease access of finance in the infrastructure and real estate sectors.
- **Transport:** Economic corridors to augment road infrastructure are being planned in Tamil Nadu, Kerala, West Bengal, and Assam. A scheme to enable private sector to finance, acquire, operate and maintain buses in public transport services will be launched. New technologies including MetroLite and MetroNeo will be used to develop metro rail systems in Tier-1 and Tier-2 cities. Seven projects for major ports will be offered on public-private partnership mode in 2021-22. A voluntary vehicle scrapping policy to phase out old and unfit vehicles was also announced.

- **Energy:** A reforms-based scheme to provide assistance to power distribution companies for infrastructure creation will be launched to address concerns over viability. A framework to provide choice to consumers among distribution companies will be launched. Ujjwala scheme will be extended to cover one crore more beneficiaries. An independent gas transport system operator will be set up to coordinate booking of common carrier capacity in all natural-gas pipelines. A Hydrogen Energy Mission to generate hydrogen from green power sources will be launched.
- **Science and Technology:** A scheme to provide financial incentives for digital modes of payments has been proposed. The Deep Ocean Mission will be launched, covering survey explorations and projects for conservation of bio-diversity.
- **Water and Sanitation:** The Jal Jeevan Mission (Urban) will be implemented to enable universal water supply and liquid waste management in urban areas. The Urban Swachh Bharat Mission 2.0 will focus on sludge and waste water management, and on ensuring a reduction in single-use plastic and air pollution.
- **Agriculture and allied sectors:** Operation Green Scheme, currently applicable to tomatoes, onions, and potatoes, will be enlarged to include 22 perishable products. The Agriculture Infrastructure Fund will be made available to APMCs to improve infrastructure facilities.
- **Social Justice:** To facilitate credit flow for SCs, STs, and women, margin money requirement under Stand Up India scheme will be reduced from 25% to 15%. 750 Eklavya model residential schools will be established in tribal areas.

Short Question and Answers

1. Keynesian Theory.

Ans :

Keynes has strongly criticised the classical theory in his book 'General Theory of Employment, Interest and Money'. His theory of employment is widely accepted by modern economists. Keynesian economics is also known as 'new economics' and 'economic revolution'. Keynes has invented new tools and techniques of economic analysis such as consumption function, multiplier, marginal efficiency of capital, liquidity preference, effective demand, etc. In the short run, it is assumed by Keynes that capital equipment, population, technical knowledge, and labour efficiency remain constant. That is why, according to Keynesian theory, volume of employment depends on the level of national income and output. Increase in national income would mean increase in employment. The larger the national income the larger the employment level and vice versa. That is why, the theory of Keynes is known as 'theory of employment' and 'theory of income'.

2. Define Inflation.

Ans :

Meaning

A continuous rise in the general price level over a long period of time has been the most common feature of both developed and developing economies. Persistent inflation is perhaps the control most serious macroeconomic problem confronting the world economy today – second only to hunger and poverty in the 'third world'. The persistent inflation and the problems associated with inflation have claimed more attention of the economists than any other macroeconomic problems.

Definition

Inflation means a considerable and persistent rise in the general level of prices over a long period of time.

3. What is Macro Economics?

Ans :

Meaning

Macro economics is a study of the economy as a whole, and the variables that control the macroeconomy.

The study of government policy meant to control and stabilize the economy over time, that is, to reduce fluctuations in the economy is known as macro economics.

Macro economics also includes the study of monetary policy, fiscal policy, and supply-side economics.

The term Macro is derived from the Greek word "MAKROS" which means large. It deals with the aggregates such as national income, output, employment and the general price level etc, therefore it is called the Aggregative Economics.

Definitions

(i) **According to Shapiro,** "Macroeconomics deals with the functioning of the economy as a whole".

(ii) **According to Boulding,** "Macroeconomics deals not with individual quantities as such, but with aggregates of these quantities, not with individual income but with national income, not with individual output but with national output".

(iii) **According to Prof. Ackley** defines Macro Economics as "Macro Economics deals with economic affairs 'in the large, it concerns the overall dimensions of economic life. It looks at the total size and shape and functioning of the elephant of economic experience, rather than working of articulation (or) dimensions of the individual parts. It studies the character of the forest, independently of the tress which compose it."

4. Define National Income.

Ans :

National Income is the measure of all the goods and services that are produced by a country during a given period of time which are counted without any duplication. In this connection. The National Income committee formed in 1949 said "A national income estimate measures the volume of commodities and services turned out during a given period counted without any duplication".

In other words, national income estimates the productive capability (ability to produce goods and services) of an economy written within a given time period in order to satisfy the wants of people. The term national income is an uncertain term and is used interchangeably with the terms National Product or National Dividend, National Output and National Expenditure.

Definitions

The concept of national income is defined in different ways.

(i) **According to National Income Committee 1951**"A national income statistics provide a wide view of the country's entire economy, as well as of the various groups in the population who participate as producers and income receivers, and that, if available over a substantial period, they reveal clearly the basic changes in the country's economy in the past and suggest, if not fully reveal, trends for the future".

(ii) **According to Marshall** "The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterials including services of all kinds. This is true net annual income or revenue of the country".

(iii) **According to Fisher** "National income includes that income which can be measured in terms of money".

5. Ersonal Income (PI)

Ans :

Personal income (PI) is defined as the total income received by the individuals of a nation from all the sources of income. Personal income includes salaries, wages, commissions and fees, fringe benefits, bonus, dividends, earnings from self-employment, earnings from interests, pensions, old age benefits, family allowances, social security allowances, unemployment allowances, sickness allowances etc., Personal income is obtained by

P1 = National income – Undistributed corporate profits – Profits taxes – Social security contribution + Transfer payments + Interests on public debt.

Where,

NI - National Income

(or)

PI = Net national product - [Undistributed company profits + Surplus of public undertakings + Rentals of public properties]

Personal Income (PI) is the total income received by the individuals of a nation from all the sources of income.

6. Disposable Income (I_d)

Ans :

Disposable income (I_d) refers to the income which the people get actually to spend. All of the income that an individual gets is not disposable because a part of it is to be paid him/her in the form of income tax and other direct taxes. Disposable income is given by

Disposable Income = Personal Income - Personal taxes

7. Explain the nature of national income.

Ans :

1. National income is the measure of all the goods and services produced by a country during a given period of time.
2. It measures or estimates the flow of goods and services in a given economy.
3. It is an indicator of development of a nation.
4. Its deals with the degree of economic problems of a nation like unemployment, inflation, food problems, balance of payments etc.
5. It is complex in nature but by comparing the national income data of one nation with another nation economic growth can be ascertained.

8. Define Fiscal Policy.

Ans :

Meaning

Fiscal policy represents the government policy related to tax and expenditure. It is a type of economic policy which controls and regulates the tax system, expenditure, borrowings and public debt management within a country.

The main focus of fiscal policy is on the flow of money in a particular economy. The process of monetary flow is initiated by the private sector which is generally transferred to the government. The government utilises these funds in the welfare of the economy. Private sector uses taxation as a channel for diverting funds to government, and these funds go back to the economy through the public expenditure.

Another important concern in fiscal policy is public debt management. Governmental loans, interest payment and retirement of matured debts, all come under public debt management. Fiscal policy, thus, proved to be very crucial for the national economy.

The role of fiscal policy differs according to the requirements of a country. Developed countries use fiscal policy as a tool to increase employment and maintain economic stability. While, underdeveloped countries use fiscal policy to boost the economic growth.

Definitions

(i) According to Buehler, "By fiscal policy is meant the use of public finance or expenditure, taxes, borrowing and financial administration to further our national economic objective".

(ii) According to Arthur Smithies, "Fiscal policy is a policy under which government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on the national income, production, and employment".

9. Advantages of fiscal policy.

Ans :

1. Inducement to Private Sector

Fiscal policy of India has provided incentives to private sector for investment and production by several measures. To set up industries in backward areas, several tax concessions have been given.

2. Mobilisation of Resources

Fiscal policy has also helped mobilisation of resources. To execute the plans, resources have mainly been provided by internal resources. By making use of measures like taxes, savings, public debt, etc. government has mobilised sufficient resources for the projects necessary for economic development. In third five year plan 72 per cent resources were mobilised for plan through internal resources. In eleventh five year plan percentage of internal resources to finance the plan rose to 100 per cent.

3. Incentives for Savings

Fiscal policy has provided several incentives for savings to household and corporate sectors. To encourage savings in the household sector, several concessions are tax exemptions have been given on life insurance, NSCs, Kisan Vikas Patra, Provident Fund, Infrastructure Bonds, etc. Tax concessions have also been allowed to corporate sector to enable them to save more and to replough their profits.

10. Define budget.

Ans :

Introduction

Budget is an Annual Financial Statement of yearly estimated receipts and expenditures of the government in respect of every financial year.

Budgeting is the process of estimating the availability of resources and then allocating them to various activities according to a pre-determined priority.

Budgets act as instruments of control and act as a benchmark to evaluate the progress of various departments.

Definitions

(i) **According to In simple words**, "budget is the yearly financial description and the estimate for the expenditure and revenue of coming years".

(ii) **According to Prof. Dalton's** thought is that." The normal thought of balanced budget is that there is a gain in the income in a time period or it is not less in comparison of expenditure."

(iii) **According to In Prof. Taylor's** words," Budget is the most important financial plan of the government. Budget, presents combine the sured income and proposed expenditure's estimate for budget year."

11. War Inflation.

Ans :

During time of wars, an urgent demand for production of war related goods and services result in increased public expenditure ordered by government. Due to this, the supply decreases and develops an inflationary gap.

Choose the Correct Answers

1. Which of the following is a method to measure the National Income? [d]

   (a) Expenditure method (b) Income method

   (c) Product method (d) All of the above

2. Which of the following is the correct term for calculating National Income at the market prices? [a]

   (a) Money income (b) Non-monetary income

   (c) Real income (d) None of the above

3. Which of the following is the correct term for calculating National Income at constant prices? [c]

   (a) Current income (b) Domestic income

   (c) Real income (d) None of the above

4. Which of the following items are not included while measuring the Gross National Product? [d]

   (a) Illegal and leisure activities

   (b) Purely financial transactions

   (c) Transferring of used goods and non-market goods and services

   (d) All of the above

5. Which of the following is the employment theory related to? [a]

   (a) Macroeconomics (b) Static economics

   (c) Microeconomics (d) None of the above

6. High inflation levels in the economy leads to _____ in the supply of money. [a]

   (a) Increase (b) Decrease

   (c) No change (d) None of the above

7. _____ compared inflation with robbers. [b]

   (a) Amartya Sen (b) Professor Brahmand and Wakeel

   (c) Professor Jagdish Bhagwati (d) Professor Key

8. Which of the following concepts is the opposite of inflation? [a]

   (a) Deflation (b) Stagflation

   (c) Recession (d) None of the above

9. A government resorts to _____ to reduce inflation. [a]

(a) Cuts in government spending (b) Increase in government expenditure

(c) Reduction in repo rate (d) None of the above

10. When the price levels of goods and services are falling continuously, this phenomenon is called _____. [a]

(a) Deflation (b) Stagflation

(c) Inflation (d) None of the above

11. If too much money is chasing too few goods, the resulting inflation is known as _____. [c]

(a) Stagflation (b) Cost-push inflation

(c) Demand-pull inflation (d) None of the above

12. The main causes of inflation in India are _____. [d]

(a) The inadequate rise in industrial production

(b) Erratic agricultural growth

(c) Deficit financing

(d) All of the above

13. _____ is an effective method to control inflation in the economy. [a]

(a) Cash reserve ratio (b) Selective control of credit

(c) Bank rate policy (d) None of the above

14. Inflation is measured by _____. [a]

(a) Consumer price index (b) Wholesale price index

(c) Marshall's index (d) None of the above

15. When inflation is a result of an increase in the price of factors of production, the result is _____. [b]

(a) Stagflation (b) Cost-push inflation

(c) Demand-pull inflation (d) None of the above

Fill in the blanks

1. _____ deals with the functioning of the economy as a whole.
2. _____ is the measure of all the goods and services that are produced by a country during a given period of time which are counted without any duplication.
3. Gross _____ is a measure of national income which is often used in macro economic analysis and policy formulation.
4. Gross _____ is the sum of market value of all final goods and services that are produced in a country during a given period of time, usually one year.
5. _____ income refers to the income generated by the production factors within the nation from its own resources.
6. _____ Sector includes agriculture and allied activities such as animal husbandry fisheries, forestry, and mining etc.
7. The _____ inflation occurs when the aggregate demand increases much more rapidly than the aggregate supply.
8. _____ means there is a sustained increase in the price level.
9. The _____ measures for controlling inflation depends on the cause of excess demand.
10. In 1986 the introduction of _____ has helped to reduce the cumulative impact of indirect taxes on manufactured products.

ANSWERS

1. Macroeconomics
2. National Income
3. Domestic Product
4. National Product
5. Domestic
6. Primary
7. Demand-pull
8. Inflation
9. Fiscal
10. MODVAT

FACULTY OF MANAGEMENT

M.B.A I Year I - Semester(CBCS) Examination

MODEL PAPER - I

ECONOMICS FOR MANAGERS

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

[Short Answer type]

Note: Answer **All** the Questions in not more than one page each

ANSWERS

1. Define opportunity cost? Explain the importance of opportunity cost. **(Unit-I, SQA-2)**
2. What is demand function? **(Unit-II, SQA-3)**
3. Learning curve. **(Unit-III, SQA-2)**
4. What is kinked demand curve? **(Unit-IV, SQA-1)**
5. What is macro economics? **(Unit-V, SQA- 3)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer type]

Note: Answer **All** the Questions by using internal choice in not exceeding four pages each

6. (a) Examine the Nature and Scope of Managerial Economics. **(Unit-I, Q.No.3)**

OR

(b) Briefly explain about Econometric Models. **(Unit-I, Q.No.21)**

7. (a) Explain in detail the law of diminishing marginal utility. **(Unit-II, Q.No.2)**

OR

(b) Explain briefly about Measurement of Elasticity of Demand. **(Unit-II, Q.No.28)**

8. (a) Explain the different stages of the law of variable Proportions.

Which stage is important for Production. **(Unit-III, Q.No.8)**

OR

(b) Explain cost output relationship under long-run period. **(Unit-III, Q.No.16)**

9. (a) How price is determined under perfect competition? **(Unit-IV, Q.No.6)**

OR

(b) Describe latest agricultural market laws. **(Unit-IV, Q.No.26)**

10. (a) Explain the nature of national income. **(Unit-V, Q.No.5)**

OR

(b) Define Fiscal Policy. Explain the nature of Fiscal Policy. **(Unit-V, Q.No.13)**

FACULTY OF MANAGEMENT

M.B.A I Year I - Semester(CBCS) Examination

MODEL PAPER - II

ECONOMICS FOR MANAGERS

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

[Short Answer type]

Note: Answer **All** the Questions in not more than one page each

ANSWERS

1. Define Managerial Economics. **(Unit-I, SQA-4)**
2. Define Law of Demand. **(Unit-II, SQA-9)**
3. Explain CES production function. **(Unit-III, SQA-7)**
4. What is monopolistic competition? **(Unit-IV, SQA-8)**
5. Inflation **(Unit-V, SQA-2)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer type]

Note: Answer **All** the Questions by using internal choice in not exceeding four pages each

6. (a) Explain how managerial economics helps in decision making. **(Unit-I, Q.No.17)**

OR

(b) Discuss about

(i) Define time perspective **(Unit-I, Q.No.13)**

(ii) Explain briefly about equi-marginal principle. **(Unit-I, Q.No.15)**

7. (a) What are the Factors influencing Demand? **(Unit-II, Q.No.7)**

OR

(b) Discuss diffeent methods of forecasting demand for a new product. **(Unit-II, Q.No.37)**

8. (a) What is a return to scale? Explain the concept of increasing, constant and decreasing returns to scale with graphs. **(Unit-III, Q.No.10)**

OR

(b) Define break-even analysis. State the key terms used in break-even analysis. **(Unit-III, Q.No.21)**

9. (a) What is monopolistic competition? Explain the features of monopolistic competition. **(Unit-IV, Q.No.10)**

OR

(b) What is Agriculture Market? Explain the classification of agricultural markets. **(Unit-IV, Q.No.25)**

10. (a) Explain the Problems in the Measure-ment of National Income. **(Unit-V, Q.No.7)**

OR

(b) What are the causes of inflation? **(Unit-V, Q.No.10)**

FACULTY OF MANAGEMENT

M.B.A I Year I - Semester(CBCS) Examination

MODEL PAPER - III

ECONOMICS FOR MANAGERS

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

[Short Answer type]

Note: Answer **All** the Questions in not more than one page each

ANSWERS

1. Equi-marginal principle. **(Unit-I, SQA-11)**
2. Define Demand Forecasting. **(Unit-II, SQA-13)**
3. Define cost function. **(Unit-III, SQA-11)**
4. What is Agriculture Produce Market Committees (APMCs)? **(Unit-IV, SQA-13)**
5. Define Budget. **(Unit-V, SQA-10)**

PART - B (5 × 12 = 60 Marks)

[Essay Answer type]

Note: Answer **All** the Questions by using internal choice in not exceeding four pages each

6. (a) "Managerial economics is prescriptive rather than descriptive". Discuss. **(Unit-I, Q.No.6)**

OR

(b) Discuss about

(i) Define opportunity cost? Explain the importance of opportunity cost. **(Unit-I, Q.No.11)**

(ii) Explain briefly about incremental principle concept. **(Unit-I, Q.No.12)**

7. (a) What are the exceptions to the law of demand? **(Unit-II, Q.No.14)**

OR

(b) What is price elasticity of demand ? Explain different types of price elasticity of Demand? **(Unit-II, Q.No.19)**

8. (a) Explain the different cost concepts useful for managerial decision making. **(Unit-III, Q.No.12)**

OR

(b) (i) The following information is provided to you:

Selling price per unit ` 40-00

Variable cost per unit ` 24-00

Fixed cost per unit ` 6-00

Profit per unit ` 10-00

Present sales volume is 2,000 units

You are required to calculate:

(i) P/v Ratio

(ii) Break-Even Point

(iii) Margin of Safety

(iv) Sales required to earn a profit of ` 26,000. **(Unit-III, Prob.2)**

(ii) What do you mean by learning curve? State the applications of learning curve. **(Unit-III, Q.No.18)**

9. (a) How is price output determined under monopolistic competition? **(Unit-IV, Q.No.11)**

OR

(b) Explain briefly about kinked demand curve. **(Unit-IV, Q.No.22)**

10. (a) Explain about Keynesian approach to the determination of national income. **(Unit-V, Q.No.8)**

OR

(b) State the instruments of Fiscal Policy. **(Unit-V, Q.No.16)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

Octobe / November - 2021

MANAGERIAL ECONOMICS

Time: 2 Hours | Max. Marks: 80

PART – A (4 × 5 = 20 Marks)

Note: Answer any four questions.

ANSWERS

1. What are the Profit maximization objectives ? **(Out of Syllabus)**
2. What is Cross elasticity of demand? **(Unit-II, SQA-1)**
3. Explain ISO quant curves **(Unit-III,SQA-1)**
4. What is Kinked demand curve? **(Unit-IV,SQA-1)**
5. What is Trade cycle ? **(Out of Syllabus)**

PART – B (4 × 12 = 60 Marks)

Note: Answer any four questions.

6. Explain how managerial economics helps in decision makine. **(Unit-I, Q.No.17)**
7. Discuss the importance and relevance of any modern theories of firm. **(Out of Syllabus)**
8. Explain in detail the law of diminishing marginal utility. **(Unit-II, Q.No.2)**
9. Discuss different methods of forecasting demand for a new product. **(Unit-II, Q.No.37)**
10. Explain the law of diminishing returns to scale. **(Unit-III, Q.No.8)**
11. What are the factors affecting cost analysis. **(Unit-III, Q.No.14)**
12. Explain the price determination mechanism in oligopoly market. **(Unit-IV, Q.No.22)**
13. What is transfer pricing? Explain its uses in global era. **(Out of Syllabus)**
14. Explain the nature and significance of national income measurement. **(Unit-V, Q.No.5)**
15. Briefly explain the policies for counter the trade cycle. **(Out of Syllabus)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

August - 2021

MANAGERIAL ECONOMICS

Time: 2 Hours Max. Marks: 80

PART – A (4 × 5 = 20 Marks)

Note: Answer any four questions.

ANSWERS

1. Wealth Maximization **(Out of Syllabus)**
2. Delphi Technique **(Unit-II, SQA-15)**
3. Diseconomies of Scale **(Out of Syllabus)**
4. Peak Load Pricing **(Out of Syllabus)**
5. Stagflation **(Out of Syllabus)**

PART – B (4 × 15 = 60 Marks)

Note: Answer any four questions.

6. What is Econometrics? Explain the use of Econometric models in decision making. **(Unit-I, Q.No.20,21)**
7. Explain fundamental concept of opportunity cost, Discounting principle and Time Perspective. **(Unit-I, Q.No.11,14,13)**
8. Explain Price, Income and Cross Elasticity of Demand. **(Unit-II, Q.No.19,22,24)**
9. What is Demand analysis ? Explain the determinants of demand. **(Unit-II, Q.No.4,7)**
10. Explain the concept of laws of diminishing marginal returns to scale and returns to Scale. **(Unit-III, Q.No.8,10)**
11. Explain Cobb Douglas and CES production function. **(Unit-III, Q.No.3,4)**
12. Explain price determination under Monopoly and Oligopoly. **(Unit-IV, Q.No.15,16,22)**
13. Explain Transfer Pricing along with its global use. **(Out of Syllabus)**
14. What is Inflation ? Explain the types, causes and measurement of of Inflation. **(Unit-V, Q.No.9,10,11)**
15. Explain the concept and measurement methods of National Income. **(Unit-V, Q.No.6)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

November - 2020

MANAGERIAL ECONOMICS

Time: 2 Hours Max. Marks: 80

PART – A (4 × 5 = 20 Marks)

Note: Answer any four questions.

ANSWERS

1. Theory of Firm **(Out of Syllabus)**
2. Law of Marginal Utility **(Unit-II, SQA-2)**
3. Learning Curve **(Unit-III, SQA-2)**
4. Oligopoly **(Unit-IV, SQA-2)**
5. War Inflation **(Unit-V, SQA-11)**

PART – B (4 × 15 = 60 Marks)

Note: Answer any four questions.

6. Explain any three fundamental economics concepts in detail. **(Unit-I, Q.No.11,14,13)**
7. What is Econometrics? Explain the use of Econometric models in decision making. **(Unit-I, Q.No.20,21)**
8. What is Law of Demand? Explain Price and Income elasticity of demand. **(Unit-II, Q.No.13,19,22)**
9. What is the concept of utility ? Explain cardinal and ordinal approaches of utility. **(Out of Syllabus)**
10. What is Production Function? Explain Cobb Douglas and CES Production Function. **(Unit-III, Q.No.2,3,4)**
11. Explain economies and diseconomies of scale in detail. **(Out of Syllabus)**
12. Explain price determination under Perfect Competition. **(Unit-IV, Q.No.6)**
13. Explain Monopoly and monopolistic competition. **(Unit-IV, Q.No.10,13)**
14. Explain the nature, concept and measurement of National Income **(Unit-V, Q.No.3,4,5)**
15. Explain classical and Keynesian approaches to income, employment and investment. **(Out of Syllabus)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

January / February - 2020

MANAGERIAL ECONOMICS

Time: 2 Hours Max. Marks: 80

PART – A (5 × 4 = 20 Marks)

(Short Answer Type)

Note: Answer All the questions in not more than one page each

ANSWERS

1. Wealth Maximization **(Out of Syllabus)**
2. Demand Function **(Unit-II, SQA-3)**
3. Learning Curve **(Unit-III, SQA-2)**
4. Nash Equilibrium **(Out of Syllabus)**
5. Aggregate Supply Schedule. **(Out of Syllabus)**

PART – B (5 × 12 = 60 Marks)

(Essay Answer Type)

Note: Answer All the questions by using internal choice in not exceeding four pages each

6. (a) Explain how Managerial Economics has its roots in Economics and Management. Does it have any link with other subjects? Support your answer. **(Unit-I, Q.No.9)**

OR

(b) 'Is Profit Maximization the primary objective of a firm'? Explain. **(Out of Syllabus)**

7. (a) Distinguish between law of demand and elasticity of demand. **(Unit-II, Q.No.17)**

OR

(b) Define Demand Forecasting. Explain different methods of demand forecasting **(Unit-II, Q.No.33,37)**

8. (a) Discuss briefly the forces which affect the cost behaviour in long run. **(Unit-III, Q.No.14)**

OR

(b) What do you mean by returns to scale? Explain the different stages of returns to scale with the help of curves. **(Unit-III, Q.No.10)**

9. (a) Discuss the main features of monopolistic competition. How is price determined under monopolistic competition? **(Unit-IV, Q.No.10,11)**

OR

(b) Discuss the pricing policies during the life cycle of a product. **(Out of Syllabus)**

10. (a) Explain the methods of measuring national income. What are the difficulties in the measurement of national income? **(Unit-V, Q.No.6,7)**

OR

(b) Define Inflation. Discuss the causes and types of inflation. **(Unit-V, Q.No.9,10)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

January - 2019

MANAGERIAL ECONOMICS

Time: 3 Hours Max. Marks: 80

PART – A (5 × 4 = 20 Marks)

(Short Answer Type)

Note: Answer All the Questions in not more than one page each

ANSWERS

1. Features of Robbins definition of Economics **(Unit-I, SQA-1)**
2. Consumer Equilibrium **(Unit-II, SQA-16)**
3. Diseconomies of Scale **(Out of Syllabus)**
4. Market Structure **(Unit-IV, SQA-3)**
5. Keynes's Saving **(Unit-V, SQA-1)**

PART – B (5 × 12 = 60 Marks)

(Essay Answer Type)

Note: Answer All the Questions by using internal choice in not exceeding four pages each

6. (a) Discuss the nature and scope of Managerial Economics. How does it differ from traditional economics ? **(Unit-I, Q.No.3,4)**

(OR)

(b) Explain about Welfare Economics. Discuss the role of government in ensuring the welfare of its citizens. **(Out of Syllabus)**

7. (a) What do you mean by Demand Analysis ? Describe the objectives of Demand Analysis **(Unit-II, Q.No.4)**

OR

(b) Explain how do you measure elasticity of demand. How do you interpret the different types of elasticity of demand ? **(Unit-II, Q.No.28,19,22,24)**

8. (a) Discuss briefly the forces which affect the cost behaviour in the long-run. **(Unit-III, Q.No.16)**

OR

(b) Define production function. How can a product find it useful? Illustrate **(Unit-III, Q.No.2)**

9. (a) Differentiate between perfect and imperfect markets. **(Unit-IV, Q.No.24)**

OR

(b) What do you understand by price discrimination? What are its objectives? What are the conditions necessary to make price discrimination effective? **(Out of Syllabus)**

10. (a) What is business cycle? Discuss briefly the important theories of business cycles. **(Out of Syllabus)**

(OR)

(b) Explain the Keynesian Approach to the determination of National Income by Aggregate demand and Aggregate Supply Approach. **(Out of Syllabus)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

July / August-2018

MANAGERIAL ECONOMICS

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

(Short Answer type)

Note : Answer all the questions.

ANSWERS

1. Opportunity cost **(Unit-I, SQA-2)**
2. Consumer surplus **(Unit-II, SQA-17)**
3. Cobb-Douglas Production function **(Unit-III, SQA-3)**
4. Kinked Demand curve **(Unit-IV, SQA-1)**
5. Stagflation **(Out of Syllabus)**

PART - B (5 × 12 = 60 Marks)

(Essay Answer type]

6. (a) Discuss the importance of managerial economics in managerial decision making. **(Unit-I, Q.No.5)**

OR

(b) What are the alternative objectives of firm? Explain briefly the profit and wealth maximization objective. **(Out of Syllabus)**

7. (a) Critically examine the Law of Diminishing marginal utility. **(Unit-II, Q.No.2)**

OR

(b) Briefly explain the different demand forecasting methods. **(Unit-II, Q.No.37)**

8. (a) Explain the cost and output relations in long run. **(Unit-III, Q.No.16)**

OR

(b) What is a return to scale? Explain the concept of increasing, constant and decreasing returns to scale with graphs. **(Unit-III, Q.No.10)**

9. (a) What is monopolistic competition and expalin how price is determined in monopolistic competition? **(Unit-IV, Q.No.10,11)**

OR

(b) Write about various types of pricing strategies available to the firm in the contemporary business world. **(Out of Syllabus)**

10. (a) What are the different methods of measuring National Income. **(Unit-V, Q.No.6)**

OR

(b) Expalin various phaes of trade cycles and also discuss the characteristics of each phase. **(Out of Syllabus)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

May/June-2018

MANAGERIAL ECONOMICS

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)
(Short Answer Type)

Note : Answer all the questions.

ANSWERS

1. Equi Marginal concept **(Unit-I, SQA-11)**
2. Determinants of Demand **(Unit-II, SQA-4)**
3. Limitations of CVP Analysis **(Out of Syllabus)**
4. Oligopoly **(Unit-IV, SQA-2)**
5. Stagflation **(Out of Syllabus)**

PART - B (5 × 12 = 60 Marks)
(Essay Answer Type)

6. (a) Explain the basic concepts of opportunity cost and discounting principle with examples. **(Unit-I, Q.No.11,14)**

OR

(b) Do you support the concepts of profit maximization or wealth maximization. Give reasons. **(Out of Syllabus)**

7. (a) What is price elasticity of demand? Explain with relevant examples. **(Unit-II, Q.No.19)**

OR

(b) Critically examine the theory of law of Demand with its limitations. **(Unit-II, Q.No.13,14)**

8. (a) What are the economies and diseconomies of scale? **(Out of Syllabus)**

OR

(b) Write in detail about Cobb Douglas production function. **(Unit-III, Q.No.3)**

9. (a) Define monopolistic competition. What are the characteristics of monopolistic competition market? **(Unit-IV, Q.No.10,11)**

OR

(b) Outline the reasons of objectives of price rigidity in oligopoly. **(Unit-IV, Q.No.21)**

10. (a) What are the types and causes of Inflation? **(Unit-V, Q.No.9,10)**

OR

(b) What is meant by National Income? Briefly write about the measures to calculate national income. **(Unit-V, Q.No.3,6)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

July / August-2017

MANAGERIAL ECONOMICS

Time : 3 Hours] [Max. Marks : 80

PART - A (5 × 4 = 20 Marks)

(Short Answer type)

Note : Answer all the questions from Part-A and Part-B.

Each question carriers 4 marks in Part-A and 12 marks in Part-B.

ANSWERS

1. Opportunity cost **(Unit-I, SQA-2)**
2. Consumer surplus **(Unit-II, SQA- 17)**
3. Production function **(Unit-III, SQA-5)**
4. Transfer pricing **(Out of Syllabus)**
5. Stagflotion **(Out of Syllabus)**

PART - B (5 × 12 = 60 Marks)

(Essay Answer Type)

6. (a) Nature and scope of Managerial Economics ? **(Unit-I, Q.No.3)**

OR

(b) Difference between Profit Maximization and Wealth Maximization. **(Out of Syllabus)**

7. (a) What is law of Diminishing marginal utility? What are the exceptions to it. **(Unit-II, Q.No.2)**

OR

(b) What is price elasticity of demand? What are the factors that determine the price elasticity of demand for different goods? **(Unit-II, Q.No.19,21)**

8. (a) Critically examine the law of variable proportion? **(Unit-III, Q.No.8)**

OR

(b) Explain economies and diseconomies of scale? **(Out of Syllabus)**

9. (a) What is price discrimination? How does a discriminating monopolist decide his output and price? **(Out of Syllabus)**

OR

(b) What is monopolistic competions? Explain the determination of equilibrium output and prices under monopolistic competition. **(Unit-IV, Q.No.10,11)**

10. (a) What is National income discuss basic concepts used in national income. **(Unit-V, Q.No.3,4)**

OR

(b) What are the causes and consences of inflation? **(Unit-V, Q.No.10,11)**

FACULTY OF MANAGEMENT

MBA I Year I-Semester (CBCS) Examination

February - 2017

MANAGERIAL ECONOMICS

Time : 3 Hours] [Max. Marks : 80

Note : Answer all the questions from Part-A and Part-B.

Each question carriers 4 marks in Part-A and 12 marks in Part-B.

PART - A (5 × 4 = 20 Marks)

(Short Answer type)

Note: Answer all the questions in not more than one page each

ANSWERS

1. Discounting Principle **(Unit-I, SQA-3)**
2. Cross Elasticity of Demand **(Unit-II, SQA-1)**
3. Economies of Scale **(Out of Syllabus)**
4. Price Discrimination **(Out of Syllabus)**
5. Inflation **(Unit-V, SQA-2)**

PART - B (5 × 12 = 60 Marks)

(Essay Answer Type)

Note: Answer all the questions by using internal choice in not exceeding 4 pages each

6. (a) What is managerial economics? Discuss the basic economic tools in managerial economics. **(Unit-I, Q.No.1,10)**

OR

(b) Discuss the importance of profit maximization as a goal of the firm. **(Out of Syllabus)**

7. (a) What is utility? Explain law of Marginal Utility. **(Unit-II, Q.No.1,2)**

OR

(b) What is price elasticity of demand? Discuss as importance in business decision making. **(Unit-II, Q.No.19,20)**

8. (a) What is production function? Explain Cobb-Douglas Production Function. **(Unit-III, Q.No.2,3)**

OR

(b) Explain the different cost concepts useful for managerial decision making. **(Unit-III, Q.No.12)**

9. (a) Explain the price and output determination in perfect competition. **(Unit-IV, Q.No.6)**

OR

(b) Write a short note on:

(i) Administered Pricing.

(ii) Peak load Pricing.

(iii) Transfer Pricing.

(iv) Penetration Pricing. **(Out of Syllabus)**

10. (a) What is National income? Explain various methods of measuring National income. **(Unit-V, Q.No.3,6)**

OR

(b) State the different stages of business cycle. What measures can be taken to solve the problems arising out of business cycle? **(Out of Syllabus)**