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सर्वश्रेष्ठ परीक्षा पथ-प्रदर्शक

B.Com. *First Year* (Certificate Course) **Semester-II**

Business Economics

SYLLABUS

UNIT-I **Introduction :** Meaning, Nature and Scope of Business Economics, Population Theory, Law of Demand, Law of Marginal Diminishing Utility, Elasticity of Demand, Concept and Measurement of Elasticity of Demand Price, Income, Cross Elasticity, Determinants of Elasticity of Demand, Importance of Elasticity of Demand. Thoughts of Famous Economist of India Including—Kautilya.

UNIT-II **Theory of Cost :** Short run and Long run Cost Curve, Traditional and Modern Approaches, Production, Function : Law of Variable Proportion; Properties, Ride Line, Optimum Factor Combination and Expansion Path; Return to Scale; Internal and External Economics and Diseconomies.

UNIT-III **Market Structure & Pricing :** Concept, Types of Markets; Perfect Competition—Characteristics, Price Determination under Perfect Competition. Monopoly—Characteristics and Price Determination under Monopoly. Oligopoly—Characteristics, Pricing Policy.

UNIT-IV **Business Cycle :** Various Phases and its Causes; Theory of Distribution; Marginal Productivity Theory, Wage—Meaning, Determination of Wage Rate Under Perfect Competition and Monopoly, Rent Concept, Modern Theories of Rent, Interest Concept and Theories of Interest, Profit—Concept and Theories of Profit.

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UNIT-I

Introduction to Business Economics

SECTION-A VERY SHORT ANSWER TYPE QUESTIONS

Q.1. Define the term 'Business Economics'.

Ans. The term business economics may be defined as, an applied branch of economics. It provides better knowledge to the management for applying economic principles in real business environment. Business economics integrates economic theories in practical activities of a business. It also reconciles the theories of traditional economics with the actual business enivronment. In fact, business economics is like a bridge between economics and business management to make an easy approach for each other.

Q.2. Write the definitions of business economics given by Bates and Parkinson and Nornan F. Dufty.

Ans. 1. According to **Bates** and **Parkinson**, "Business Economics is a study of the behaviour of firms in theory and practice."

2. According to **Norman F. Dufty**, "Business economics includes that portion of economics known as the theory of firm, a body of a firm theory, which can be of considerable assistance of the businessman in his decision-making."

Q.3. Discuss business economics as normative science.

Ans. Normative Science is that, branch of science which studies 'what should be done.' In fact, it provides a solution to the problem. On this basis it can be understood that normative science suggest a way or procedure to be adopted for performing an act or solving a problem in order to achieve main objectives of the business. So many businessmen feel a problem in respect of their demand of products, price of the product and profit level to be fixed in order to face market competitions. These all problems are well analysed with the help of business economics as a normative science.

Q.4. Give any two advantages of business economics.

Ans. Following are the two main advantages of business economics:

1. **Minimises, Risk and Uncertainties :** Risk and uncertainties both exist everywhere in business environment. These both factors can ruin a business if these are not pre-estimated. Risk and uncertainty cannot be completely abolished but these can be minimized to a certain limit. In business economics, with the help of accurate forecasting and future planning, risks and uncertainties both can be brought up to a minimum limit.

2. **Helpful in Forecasting :** Forecasting is an important element of business economics. With the help of forecasting the profits of a business can be maximised. Business economics helps a management to forecast successfully in respect of demand of the product, cost of the product and profit ratio on the sale of the product.

Q.5. Explain Malthusian Theory of Population.

Ans. Malthus was the first to state a systematic principle of population in 1798 in his famous work titled, essay on the Principle of Population as it affects the future Improvement of Society'. He modified some of his conclusions in the next edition in 1803. The rapidly increasing population of England, encouraged by a misguided Poor Law, distressed him most. He apprehended that England was heading for a disaster, and he considered it his solemn duty to warn his countrymen. He pointed out that the accelerated increase in population was undesirable and it was essential to keep it in check. His views are collectively known as the Malthusian Theory of Population.

Q.6. Discuss 'Optimum Theory of Population.

Ans. The optimum theory of population is the product of reaction to the Malthusian theory of population. The theory takes into consideration the entire economic aspects related to population and economic conditions, and tries to lay down desirable norms regarding population. Optimum population refers to a State where the population is neither more nor less than the socially desirable level.

Q.7. Explain cross elasticity of demand.

Ans. It is the ratio of proportionate change in the quantity demanded o: Y to a given proportionate change in the price of the related commodity X. It is a measure of relative change in the quantity demanded of a commodity due to a change in the price of its substitute/complement. For example, change in the price of tea ordinarily causes change in demand for coffee. Likewise, change in the price of cars causes change in demand for petrol. Mutual relationship between quantity demanded of a goods due to change in the price of another goods can be measured by cross elasticity of demand.

In the words of **Ferguson**, "The cross elasticity of demand is the proportional change in the quantity demanded of goods X divided by the proportional change in :he price of 'the related goods Y." According to **Liebhafsky**, "The cross elasticity of demand is a measure of the responsiveness of purchases of X to change in the price of Y."

Q.8. Discuss briefly income elasticity of demand.

Ans. The change in demand because of change in income of the consumer. It is not necessary that there should be a change in price and then only there shall be a change in demand for a commodity. Quite often it is seen that an increase or decrease in income brings about a change in demand for the commodity.

In the words of **Watson**, "Income elasticity of demand means the ratio of the percentage change in the quantity demanded to the percentage change in income." According to **Richard G. Lipsey**, "The responsiveness of demand to change in income is termed as income elasticity of demand."

SECTION-B SHORT ANSWER TYPE QUESTIONS

Q.1. Discuss business economics as a positive science and as a normative science.

Ans. 1. **Business Economics as a Positive Science :** 'Positive science' is that branch of science which relates with the view 'what is to be done'. It does not give any solution and procedure for any problem or act. On this basis, it is agreed that business economics is a positive science because it gives help in the study of different aspects of a firm. Such as determination of production value, total cost, per unit cost and profit ratio, etc.

2. **Business Economics as a Normative Science :** 'Normative Science' is that branch of science which studies 'what should be done.' In fact, it provides a solution to the

problem. On this basis it can be understood that normative science suggests a way or procedure to be adopted for performing an act or solving a problem in order to achieve main objectives of the business. So many businessmen feel a problem in respect of their demand of products, price of the product and profit level to be fixed in order to face market competitions. These all problems are well analysed with the help of business economics as a normative science.

Q.2. Write any four disadvantages of Malthusian theory of population.

Ans. Disadvantages of Malthusian Theory of Population

This theory is criticised on the following grounds :

1. **Malthus could not foresee the opening up of new area :** He failed to perceive the opening up of new areas of America, New Zeatand, Australia, Argentina, etc.. where extensive farming of virgin land led to increased production of food. Consequently, countries like England, France, etc., have been provided with plenty of supply of cheap food. Rapid improvement in the means of transport acted as a catalist in this process; a factor overlooked by Malthus. No wonder the spectre of famine has become a thing of the past.
2. **History does not support the fears of Malthus :** Malthus has proved to be a false prophet as his worst predictions were belied by subsequent events. In some countries like France the rate of increase in population was very slow. In other countries the increase in population was not a problem because growth in population was accompanied by increased national income. His pessimistic prophesy that misery will stalk these countries if they fail to check the growth of population through preventive checks proved wrong.
3. **Positive checks are not due to over population :** National calamities are not peculiar to over populated countries. They visit even thinly populated countries such as France, Japan, etc.
4. **Every increase in population is not harmful :** Malthus' belief that every increase in population is harmful, is not correct. Upto the optimum level an increase in population should be welcomed as it will benefit the country to increase its per capita income rapidly.

Q.3. Discuss various advantages of Optimum Theory of Population.

Ans. Advantages of optimum Theory of Population

The theory is important on the following counts :

1. It stressed the need to control the population and, therefore, it is useful to support the family planning programmes.
2. It emphasises the need to increase income per head which can contribute to the welfare of the citizens of a country.
3. Equally important is its emphasis on changing the environment according to time and changing conditions to maintain the equilibrium of society and nation.
4. The theory tries to establish earnest connection between population and economic progress.
5. The theory views population as agents of production and points out neither over population or under population will be beneficial for the country.
6. Its exponents have discussed the whole concept of optimum population on the basis of income per head, which is merely scientific theorising.

7. It has successfully countered the phychosis that man is a slave of his environment and showed that through judicious combination of factors of production, we can conquer our surroundings.

Q.4. Compare Malthusian theory with Logistic Curve theory.

Ans. Comparison between Malthusian and Logistic Curve theory is discussed below:

1. Malthus said that the population always keeps on increasing. But this theory states that the increase in population will come down after some time and finally falls to zero rate or even decline.
2. Malthus believed that population keeps on increasing at a geometric progression, but Pearl thinks that it is not necessary for population to increase according to given rates.
3. Malthus maintained that population tends to grow fast with economic and cultural development, while the supporters of logistic theory believe that with development the population will either become stationary or even decline..

Q.5. Differentiate between business economics and traditional economics.

Ans.

Difference between Business Economics and Traditional Economics

S. No.	Business Economics	Traditional Economics
1.	Business economics deals with the economic principles and rules to solve the problems of a business.	Traditional economics deals with economic principles and rules on the basis of theoretical aspects.
2.	The scope of business economics is narrower. It deals with micro economics mainly.	The scope of traditional economics is wider. It deals with macro and micro economics both.
3.	Business economics is related with normative science.	Traditional economics is related with positive and normative science.
4.	Business economics studies both economic and non-economic factors.	Traditional economics studies only economic factors.
5.	Business economics deals with the problems of firm only.	Traditional economics deals with the problems of firm and individual both.
6.	Business economics deals with the theory of profit only.	Traditional economics deals with the theories of rent, wages, interest and profit, etc.
7.	The main important function of business economics is decision-making.	Traditional economcis does not give importance to the process of decision-making.
8.	Business economics is a modern and developing subject.	Traditional economics is very old and well setablished subject.

Q.6. Write the difference between Law of demand and elasticity of demand.

Ans.

Distinction between Law of Demand and Elasticity of Demand

Basis	Law of Demand	Elasticity of Demand
Meaning	If other things remain same then, increase in demand of commodity due to decrease in price and decrease in demand of a commodity due to increase in price is known as law of demand.	The measurement of charge in quantity demand due to change in price of a commodity is known as elasticity of demand.

Nature	Law of demand is a qualitative statement.	Elasticity of demand quantitative satement.
Relation	Law of demand states inverse relation between demand and price of a commodity.	Elasticity of demand does not show any relation. It is negative or positive or infinite.
Factors	Law of demand is based on the main factor relating to price of commodity.	Elasticity of demand is affected by income , price of

Q.7. Calculate price elasticity of demand for different years from the following data:

Year	Proportionate change in quantity	Proportionate change in price
2017	+ 1.8	– 1.0
2018	+ 10.8	– 4.8
2019	0	+ 2.0
2020	+ 4.0	+ 6.0
2021	+ 9.0	– 2.5

Sol.
$$e_p = \frac{\text{Proportionate change in quantity}}{\text{Proportionate change in price}}$$

Year	Proportionate change in quantity	Proportionate change in price	Price Elasticity
2017	+ 1.8	– 1.0	1.8
2018	+ 10.8	– 4.8	2.25
2019	0	+ 2.0	∞
2020	+ 4.0	+ 6.0	0.666
2021	+ 9.0	– 2.5	3.6

Note: In determining the price elasticity of demand minus sign is ingnored because indirect relationship between price and demand is implied.

Q.8. If the price of a commodity increases by 25% and its demand decreases from 500 units to 300 units, then what will be its demand elasticity?

Sol.
$$e_p = \frac{\text{Percentage Change in Demand}}{\text{Percentage Change in Price}}$$

$$\text{Percentage change in demand} = \frac{\text{Change in Demand}}{\text{Original Demand}}$$

or
$$\frac{Q_1 - Q_2}{Q_1} = \frac{500 - 300}{500} = \frac{-200}{500} \times 100 = 40\%$$

$$e_p = \frac{40\%}{25\%} = 1.6$$

Q.9. A fruit seller is able to sell 1,500 kg of oranges at ₹ 30 per kg. If the price increases to ₹ 40 per kg then what quantity will he be sucessful in selling if the elasticity of demand is 1.25?

Sol.
$$e_p = \frac{Q_1 - Q_2}{Q_1} + \frac{P_1\ P_2}{P_1}$$

$$\Rightarrow \quad -1.25 = \frac{1,500 - Q_2}{1,500} \div \frac{30-40}{30} \qquad \Rightarrow \quad -1.25 = \frac{1,500 - Q_2}{1,500} \times \frac{30}{30-40}$$

$$\Rightarrow \quad -1.25 = \frac{45,000 - 30Q_2}{-15,000} \qquad \Rightarrow \quad 18,750 = 45,000 - 30Q_2$$

$$\Rightarrow \quad 30Q_2 = 45,000 - 18,750 \qquad \therefore \quad Q_2 = \frac{26,250}{30} = 875 \text{ kg}$$

Q.10. A shopkeeper spends as follows for two commodities at various prices :

Price per kg	Total Outlay (X)	Total Outlay (Y)
20	0	0
16	18,000	16,000
14	21,000	21,000
12	24,000	27,000
10	28,000	30,000

Find out elasticity of demand when price falls from (i) ₹ 16 to ₹ 14, (ii) ₹ 16 to ₹ 12, (iii) when price increases from ₹ 12 to ₹ 16.

Sol. **Demand Schedule for X and Y**

Price per kg	Total Outlay X	Demand	Total Outlay Y	Demand
20	0	0	0	0
16	18,000	1,125	16,000	1,000
14	21,000	1,500	21,000	1,500
12	24,000	2,000	27,000	2,250
10	28,000	2,800	30,000	3,000

$$e_p = \frac{Q_1 - Q_2}{Q_1} \div \frac{P_1 - P_2}{P_1}$$

1. When price falls from ₹ 16 to ₹ 14

For X

$$e_p = \frac{1,125 - 1,500}{1,125} \div \frac{16-14}{16}$$

$$= \frac{-375}{1,125} \times \frac{16}{2} = \frac{6,000}{2,250} = 2.66$$

For Y

$$ep = \frac{1,000 - 1,500}{1,000} \div \frac{16-14}{16}$$

$$= \frac{-500}{1,000} \times \frac{16}{2} = \frac{8,000}{2,000} = 4$$

2. When price falls from ₹ 16 to ₹ 12

For X

$$ep = \frac{1,125 - 2,000}{1,125} \div \frac{16-12}{16}$$

$$= \frac{-875}{1,125} \times \frac{16}{4} = \frac{-14,000}{4,500} = 3.1$$

For Y

$$ep = \frac{1,000 - 2,250}{1,000} \div \frac{16-12}{16}$$

$$= \frac{-1,250}{1000} \times \frac{16}{4} = \frac{20,000}{4,000} = 5$$

3. When price increases from ₹ 12 to ₹ 16

For X

$$ep = \frac{2,000 - 1,125}{2,000} \div \frac{12 - 16}{12}$$

$$= \frac{875}{2,000} \times \frac{12}{4} = \frac{10,500}{8,000} = 1.31$$

For Y

$$ep = \frac{2,250 - 1,000}{2,250} \div \frac{12 - 16}{12}$$

$$= \frac{1,250}{2,250} \times \frac{12}{4} = \frac{15,000}{9,000} = 1.66$$

Q.11. Determine elasticity of demand with the help of Arc Method & Percentage Method:

$Q = 2,000, P = ₹10$ $\quad\quad$ $Q_1 = 5,000, P_1 = ₹9$

Sol.

Arc Method :

$$e_p = \frac{Q - Q_1}{Q + Q_1} \div \frac{P - P_1}{P + P_1} = \frac{2,000 - 5,000}{2,000 - 5,000} \div \frac{10 - 9}{10 + 9}$$

$$= \frac{-3,000}{7,000} \times \frac{19}{1} = \frac{-57,000}{7,000} = -8.14$$

Percentage Method :

$$ep = \frac{Q_1 - Q_2}{Q_1} \div \frac{P_1 - P_2}{P_1} = \frac{2,000 - 5,000}{2,000} \div \frac{10 - 9}{10} = \frac{-3,000}{2,000} \times \frac{10}{1} = -15$$

Q.12. When the price of product A was ₹ 8, the quantity demanded was 20 units. When the price did not change, the quantity demanded fell to 15 units. When the price of product B was ₹ 8, the quantity demanded was 18 units. When the price rose to ₹ 13, the quantity demand remained at 18 units. Prove that product A and B are complementaries.

Sol.

	Product A	**Product B**
Old Price	₹ 8	₹ 8
Quantity demand	20 units	18 units
New Price	₹ 8	₹ 13
Quantity demand	15 units	18 units

$$\text{Cross Elasticity } (e_c) = \frac{\textit{Change in quantity demand of product A}}{\textit{Change in price of product B}}$$

$$e_c = \frac{15 - 20}{13 - 8} = \frac{-5}{5} = -1$$

The cross elasticity is negative, therefore, product A and B are complementaries.

Q.13. What is meant by 'Advertising elasticity of demand'? Also discuss its importance.

Ans. **Advertising Elasticity of Demand**

Present time is the time of throat cut competition. Advertisement has become an important tool for creating, increasing and maintaining the demand of the products. Creation of demand is necessary for new product while increment and maintenance of demand are necessary for existing products.

Advertising elasticity of demand can easily measure the effect of advertisement on the demand of a product. It measures the fluctuation of demand due to the change in advertisement expenses. Advertising elasticity of demand is also called Promotional Elasticity of Demand.

Advertising Elasticity of Demand (e_a)

$$= \frac{\text{Proportionate / Percentage Chnage in demand}}{\text{Proportionate / Percentage change in advertising outlay}}$$

or $$e_a = \frac{Q_1 - Q_2}{Q + Q_2} \times \frac{A_1 + A_2}{A_1 - A_2}$$

Here, e_a = Advertising elasticity of Demand

Q_1 = Quantity demanded before change in Advertising Expenses

Q_2 = Quantity demanded after change in Advertising Expenses

A_1 = Amount of Advertising Expenses before change

A_2 = Amount of Advertising Expenses after change

Importance or Utility of Advertising Elasticity of Demand

The concept of advertising elasticity of demand is important for a business on the basis of following points :

1. The concept of advertising elasticity of demand helps the management in deciding the quantum of advertising expenses. If the advertising elasticity of a product is more than unit, the advertising expenditure should be increased and vice-versa.
2. The concept of advertising elasticity of demand also helps the managerial authorities in studying the effect of advertisement on the sales volume. If sales volume is going higher, the advertising expenses will show beneficial result and vice-versa.
3. The concept of advertising elasticity of demand also helps in evaluating the effectiveness of various media of advertisement.

Q.14. Calculate Advertisement elasticity of demand with the help of following data :

Year	Proportionate change in sales/demand	Proportionate change in expenses
2015	+ 4	– 10
2016	+ 5	– 10
2017	– 6	0
2018	– 14	– 20
2019	+ 11	– 3
2020	0	– 4

Sol. $$e_a = \frac{\textit{Proportionate Change in Demand}}{\textit{Proportionate Change in Expenses}}$$

year	Proportionate change in demand	Proportionate change in expenses	Advertising elasticity e_a
2015	+ 4	– 10	0.4
2016	+ 5	– 10	0.5
2017	– 6	0	∞

2018	– 14	– 20	0.7
2019	+ 11	– 3	3.67
2020	0	– 4	0

Q.15. Discuss the relationship between Marginal Revenue, Average Revenue and Elasticity of Demand.

Ans.

Relationship Between Marginal Revenue, Average Revenue and Elasticity of Demand

Relationship between elasticity of demand and revenue has an important phase in decision-making process of a firm. The term 'Revenue' means the amount received by a firm from the sale of its products. There are three types of revenue which are as follows :

1. **Total Revenue (TR) :** Total revenue is calculated by multiplying the total units sold by per unit selling price.

   According to the formula,

   TR = Total units Sold × Selling Price per unit

2. **Average Revenue (AR) :** Average revenue is calculated by dividing the total revenue by total number of units sold. According to the formula,

$$AR = \frac{Total\ Revenue}{Total\ Unit\ Sold}$$

3. **Marginal Revenue (MR) :** Marginal revenue means an increase in total revenue amount by sale of one additional unit of a product. For example, a firm gets 10,000 by selling 100 units of a product and ₹ 10,090 by selling 101 units, then marginal revenue will be ₹ 90.

Mrs. John Robinson has stated that there exists a close relationship between average revenue, marginal revenue and elasticity of demand. She gave the following formulae in this aspect :

1. Elasticity of demand $(e) = \frac{Average\ Revenue\ (AR)}{Average\ Revenue\ (AR) - Marginal\ Revenue\ (MR)}$

2. Average Revenue (AR) = $MR\frac{e}{e-1}$

3. Marginal Revenue (MR) = $AR\frac{e-1}{e}$

The following conclusion may be given in respect of the relationship of average revenue, marginal revenue and elasticity of demand :

1. When elasticity of demand is greater than unit, the marginal revenue will be positive and vice-versa.
2. When elasticity of demand is zero, the marginal revenue will also be zero and the difference between marginal and average revenue is maximum.
3. When elasticity of demand is infinite then marginal revenue and average revenue both with be equal.

Q.16. A company is currently selling its product at a price of ₹ 10. In order to increase sales, the company affects a cut of 20% in price which results in the demand going up from present 5,000 units to 7,000 units. Calculate elasticity of demand using (i) proportionate method and (ii) Are Method.

Sol.

1. $e_p = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$

Where, ΔQ = change in demand = 7,000 – 5,000 = 2,000 units

ΔP = change in price = 8 – 10 = 2

$P = 10,\ Q = 5{,}000$

$$e_p = \frac{2{,}000}{-2} \times \frac{10}{5{,}000} = 2$$

2. **Arc Method :**

$$e_p = \frac{Q_2 - Q_1}{Q_2 - Q_1} \times \frac{P_2 + P_1}{P_2 - P_1} = \frac{7{,}000 - 5{,}000}{7{,}000 - 5{,}000} \times \frac{8+10}{8-10} = \frac{2{,}000}{12{,}000} \times \frac{18}{-2} = 1.5$$

Q.17. Below is given a demand equations :

$$Q = 6P + 400$$

Calculate price elasticity of demand if price is (a) ₹ 8, (b) ₹ 20, (c) ₹ 30. Is the demand at these prices elastic or inelastic?

Sol. (A) (i) If the ruling price is ₹ 8 : $Q = 6P + 400$

$$Q_1 = 6(8) + 400 = 448$$

(ii) If the ruling price is ₹ 20 : $Q_2 = 6(20) + 400$

(iii) If the ruling price is ₹ 30 : $Q_2 = 120 + 400 = 520$

$$Q_3 = 6(30) + 400$$

$$Q_3 = 180 + 400 = 500$$

(B) Calculation of price elasticity of demand :

(i) By proportionate method :

(On the basis of first (₹ 8) and second (₹ 20) ruling prices :

Formula : $e_p = \frac{Q_1 - Q_2}{Q_1} \div \frac{P_1 - P_2}{P_1}$

$$e_p = \frac{448 - 520}{448} \div \frac{8 - 20}{8} = \frac{-72}{448} \times \frac{8}{-12} = 0.107$$

(On the basis of second (₹ 20) and (₹ 30) ruling prices) :

$$e_p = \frac{520 - 580}{520} \div \frac{20 - 30}{20} = \frac{-60}{520} \times \frac{20}{-10} = 0.231$$

(C) By Arc Method :

Formula : $e_p = \frac{Q_1 - Q_2}{Q_1 + Q_2} \div \frac{P_1 - P_2}{P_1 + P_2}$

(On the basis of first (₹ 8) and second (₹ 20) ruling prices :

$$e_p = \frac{448-520}{448+520} \div \frac{8-20}{80+20} \quad \Rightarrow \quad e_p = \frac{-72}{968} \times \frac{28}{-12} = 0.174$$

(On the basis of second (₹ 20) and third (₹ 30) ruling prices :

$$e_p = \frac{520-580}{520+580} \div \frac{20-30}{20+30} \quad \Rightarrow \quad e_p = \frac{-60}{1100} \times \frac{50}{-10} = 0.273$$

As e_p in both cases under both methods is very low, it can be termed as highly elastic.

Q.18. Find elasticity of demand on the basis of following data, when (a) price falls from ₹ 3 per kg to ₹ 2 per kg and (b) price rises from ₹ 2 per kg to ₹ 3 per kg.

Price per kg (₹)	4	3.5	3	2.5	2
Total outlay (₹)	0	315	540	675	720

Sol. **Preparation of Demand Schedule**

Price Per Kg (₹)	Total outlay (₹)	Demand (Total outlay ÷ Price Per Kg)
4	0	0 ÷ 4 = 0
3.5	315	315 ÷ 3.5 = 90
3	540	540 ÷ 3 = 180
2.5	675	675 ÷2.5 = 270
2	720	720 ÷ 2 = 360

$$e_p \text{ (Proportionate Method)} = \frac{Q_1 - Q_2}{Q_1} \div \frac{P_1 - P_2}{P_1}$$

(a) $e_p = \frac{180-360}{180} \div \frac{3-2}{3} = \frac{180}{180} \times \frac{3}{1} = 3$

(b) $e_p = \frac{360-360}{180} \div \frac{2-3}{2} = \frac{180}{360} \times \frac{1}{2} = 1$

Q.19. Explain the 'Arthashastra' written by famous economicst of India ' Kautilya'.

Ans. **Arthashastra**

Kautilya's Arthashastra is one of the most widely known treaties of ancient India. Arthashastra which was written primarily as a book of codes for efficient administration by the monarch also includes issues pertaining to wealth creation both, for sovereign and his subjects. It deals explicitly with taxation principles, international trade issues, labour theory of value, etc. Earlier research papers have mainly focused on the political and governance issues of the treatise often neglecting the economic issues it covers. However, Kautilya set forth his valuable opinion on economic management in ancient India. The term 'artha' used by Kautilya has a broader meaning beyond personal wealth. Unlike the modern capitalist system where individual is the prime focus, Kautilya regards society above the individual interest. Kautilya's Arthashastra identifies a crucial role for state/government for the material well-being of the nation and its people. He regards money as valuable only to the extent it serves as a means to acquire goods. It is not desirable for its own sake. And thus the Arthashastra guides individuals to mould their lives for ethical wealth generation. In modern times, corporate scandals like Enron, Tyco and Satyam have time and again brought forth the

importance of ethics in economic and corporate affairs. The present paper is an attempt to examine ethical aspects of Indian society in light of the economic principles enuntiated by Kautilya's Arthashastra. The paper addresses issues like: relation of economics and ethics; economic rules in ancient India to preserve ethics in society and relevance of such ethics to present times. This is done by research study of available sources of literature on Kautilya's Arthshastra. In view of seamless integration of economics with ethics, Kautilya's Arthashastra is as relevant today, if not more, as compared to Adam Smith's Wealth of Nations.

SECTION-C LONG ANSWER TYPE QUESTIONS

Q.1. Discuss the criticisms of Malthusian Theory of population.

Ans. Criticisms of Malthusian Theory of Population

Malthusian Theory is critisised on the following grounds :

1. **Malthus took for granted that human beings are invariably vegetarians :** The reality is that large number of people are non-vegetarians who subsist on fish meat, etc.
2. **The mathematical form of the theory is not correct :** Empirical evidences do not corroborate the rate of increase in food supply and population in 25 years as visualised by Malthus. Rather, the food supply has increased more than in the arithmetical progression. This criticism looses much of its sting as Malthus used it in the first edition to make his principle clear and deleted it in its second edition.
3. **Malthus could not foresee the opening up of new area :** He failed to percieve the opening up of new areas of America, New Zealand, Australia, Argentina, etc., where extensive farming of virgin land led to increased production of food. Consequently, countries like England, France, etc., have been provided with plenty of supply of cheap food. Rapid improvement in the means of transport acted as a catalist in this process; a factor overlooked by Malthus. No wonder the spectre of famine has become a thing of the past.
4. **History does not support the fears of Malthus :** Malthus has proved to be a false prophet as his worst predictions were belied by subsequent events. In some countries like France the rate of increase in population was very slow. In other countries the increase in population was not a problem because growth in population was accompanied by increased national income. His pessimistic prophesy that misery will stalk these countries if they fail to check the growth of population through preventive checks proved wrong.
5. **Positive checks are not due to over population :** National calamities are not peculiar to over populated countries. They visit even thinly populated countries such as France, Japan, etc.
6. **Every increase in population is not harmful :** Malthus' belief that every increase in population is harmful is not correct. Upto the optimum level an increase in population should be welcomed as it will benefit the country to increase its per capita income rapidly.
7. **Population is not related to food supply but to total wealth :** Malthusian theory is based on a weak relationship between population and food supply. As a matter of fact the right relationship is between population and total wealth. If a country is materially rich, it can feed its millions well by importing food stuffs in exchange for its products or

money. Britain is a typical example as it imports all its food requirement from Holland, Denmark, Belgium and Argentina in exchange for its products.

8. **Increase in population is the result of a decline in birth :** The Malthusian theory is one-sided. It has taken the increase in population as the result of a rising birth rate, whereas population has grown considerably the world over due to decline in death rate. Malthus could not foresee the tremendous advancement of medical sciences which have controlled fatal diseases and made human life longer. This is true more particularly in the case of India where Malthusian theory is said to operate.
9. **Preventive checks do not mean moral restraint :** Malthus suggested moral restraint, celibacy, etc., to contain population. He could not imagine the modern devices of contraceptives which are being extensively employed in checking population. Moral restraint alone cannot help control the increase in population which Malthus suggested.
10. **Malthus failed to recognise the manpower aspect in population :** Malthus thought that every baby coming to the world is a burden on Society. According to **Cannan**, "A baby comes to the world not only with a mouth and a stomach but also with a pair of hands." It means that an increase in population means an increase in manpower which may tend to augment production. Population should be viewed in relation to production. As pointed out by **Seligman**, "The problem of population is not merely one of the mere size but of efficient production and equitable distribution."
11. **Malthus held the poor people responsible for their misery :** Malthus felt that the poor people tried to increase their number faster. **Malthus** said that, "The poor are themselves the cause of their poverty." **Karl Marx** and other socialist writers took strong exception to this view and held exploitation of labour, unequal distribution, defective government policies, etc., responsible for the poverty of the masses.
12. **Malthus adopted the inductive method in his principle :** Malthus extensively employed statistical data pertaining to few countries to evolve his thesis. The inductive method which he has used, cannot be of universal application.
13. **Malthusian theory is static and pessimistic :** It considers every child born is a social curse and as such is the cause for pessimism in the scoiety.
14. **Malthus has taken one point of time into consideration :** Malthus has forgotten that times can change when improvements in agriculture through new techniques will help raise food production.
15. **In expounding his theory Malthus was influenced by the prevailing surrounding :** According to **Harvey**, "He knew what had happened, he saw what was happening, but influenced by his surroundings his vision as to what was to happen was unduly obscured."

Q.2. Is Optimum theory an improvement over the Malthusian theory? Discuss.

Ans. After an examination of both the Malthusian Theory and the Optimum Theory of Population we can observe the following superiority of the former over the latter.

1. Prof. Malthus has linked population growth with the availability of food or food supplies, whereas the authors of optimum theory linked population growth with natural resources, capital and production techniques and ultimately with total production.

2. Malthus considered every increase in population harmful whereas the optimum theory considers the population harmful only if it exceeds the optimum limit. .
3. Prof. Gide has pointed out that Malthus was a pessimist with a negative approach. Optimum theory of population exudes optimism. Malthus was obsessed by the possibility of an impending economic hell, while the supporters of optimum theory of population were elated by the hope of a coming paradise.
4. Maithus has concluded that visitations of natural calamities like floods, earthquakes, etc., are harbingers of excess population. Optimum theory has adopted a realistic stand in this matter. It does not give much significance to these natural calamities, but considers the question exclusively from the angle of ncome per head. The country will be over populated only if the population increase results in a fall in per capita income.
5. Optimum criteria has laid down the economically feasible population, in the context of natural resources, capital stock, technique of production, etc. Malthus failed to give a scientific assessment of the socially desirable quantities of population.
6. Malthusian theory finds ready application in backward and over population countries, whereas, the optimum theory could be applied to all types of countries - whatever be the size of its population.
7. Malthus viewed population from the consumption angle, whereas the optimum theory considers the whole issue from the productive point of view. Every child born was treated as a burden on the available supply of the food. Optimum theory considers population as addition to labour supply. Malthus theory is considered as a static equilibrium theory whereas the optimum theory is more dynamic and volatile.
8. Malthus harps on the theme of moral and religious codes in population theory while the optimum theory is free from these ethical concepts and adopts a more rationalistic approach.

Thus, the optimum theory has contributed in its own way to the discussion of population problems in our times. According to **Hauser** and **Duncan**, "One is led to the conclusion that the potential contributions of optimum theory, whatever they may be, have been prejudiced by the combination of normative and empirical considerations in the framework of a single doctrine and that, partly as a result of this, there has been vigorous prosecution of the kind of empirical research suggested by optimum theory."

Q.3. Discuss Logistic Curve Theory of population

Ans.

Logistic Curve Theory of Population

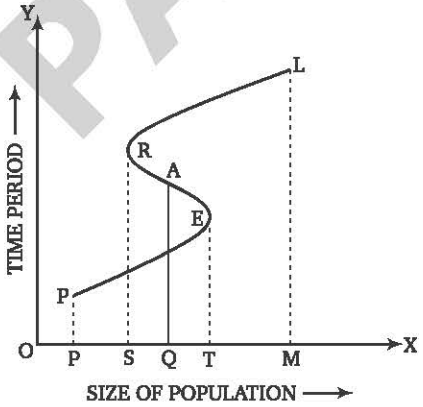
In 1835, **Quetelet** advanced the theory that with increasing density of population, the growth of population tends to slow down. In 1835 **Verhulst** put it in the form of a mathematical curve which he named the logistic. However it was forgotten, and the logistic curve was not used in population theory again until 1929 when it was independently discovered by **Pearl** and **Reed**. Initially, the theory was based on experiments with yeast, fruit flies and chickens. The conditions of the experiments were—

1. The initial population was small in relation to the space which was provided for it.
2. Ample food was provided.
3. The experimenter provided the fuel externally.
4. Space limit of the environment was held constant.

Under these conditions Pearl found that each of the species tended to multiply at a fast pace initially, which was maintained until a very high density was reached. The rate of increase decelerated and ultimately all growth ceased. **Pearl** concluded, "Population wanes and waxes, rises and falls and increases rapidly and slowly and on the whole it is ever increasing.

Briefly the theory can be presented under the following heads :

1. Population does not grow in geometric progression but it moves in an irregular path, at times growing fast and retarding afterwards. This cycle repeats itself regularly. The assumptions of the theory are —
   (a) The land available is scarce which constitute, a constraint in population increase.
   (b) Rate of population can neither rise to infinity nor decline to zero.
   (c) Rise and fall of population assumes, the form of a cycle. "To determine the cycle by changes in the growth of population is obviously circular."
   (d) "The point of maximum rate of growth is the point of inflection of the population growth curve. After that point is passed, the rate of growth it becomes progressively slower, finally the curve stretches along nearly horizontal, in close approach to the upper asymptote which belongs to the particular cultural epoch and the area inolved. In this figure, the size of population is taken on the X-axis and the time period on the Y-axis. The big S is the logistic curve where population starts increasing at point P and continues to grow upto point E. The growth of population is very steady from point ON to OT. From E onwards, population starts declining. For instance, at point A it declines to OQ from OT. The decline goes on till the point R, after which the population again begins to grow. At point L the overall size of population increases to OM over time. Even after the fall, the population stays at a higher plateaus.



2. Pearl and Reed analysed the population of many countries and cities and found that the growth in population is more or less like economic growth.
3. It is difficult to give a precise time span for a country to move from one stage of growth to reach the other stage.
4. Poor couples like to come close to each other frequently with the result that they have more children than the rich.

Pearl could not carry out his experiments with human beings as he had to face formidable hurdles in his attempts.

Q.4. Explain the major features of business economics. Also discuss the nature of business economics.

Ans. **Characteristics of Business Economics**

After analysing the different definitions of business economics given by different economists, following characteristics of business economics may be explained as under :

1. **Micro Economics in Nature** : The main object of business economist is centralised to the different problems of the firm, therefore he tries best in his efforts to solve these problems. In this way, business economics relates only with the firm's problems therefore its nature is of micro economics.
2. **Normative Science in Nature** : Business economics emphasisises more on normative science than positive science. It is related with 'WHAT IS' and establishes relationship between causes and results. While normative science relates with 'WHAT OUGHT TO BE'.
3. **Prescriptive Approach** : Business economics adopts prescriptive approach. According to prescriptive approach a business economist decides the way to apply economic principles and analysis in execution of different functions like, price determination, policy determination, decision-making and planning.
4. **Study of Theory of Firm** : Business economics is based on the assumptions of micro economics, therefore, it studies only the problems and functions of a firm. It stresses on firm's demand and supply, cost and revenue, price determination and profit determination, etc.
5. **Pragmatic and Applied Approach** : Business economics applies economic principles in a practical way. Therefore, it proceeds towards the result after solving the day-to-day problems of a firm.
6. **Inclusion of Macro Economics** : Business economics is also related with macro economics. Business decisions are affected by the different environmental conditions. Thus a business economics takes different decisions by keeping in view the principles of macro economics : Government policies, monetary policies, fiscal policies, labour policies, taxation policies, etc.
7. **Decision at Managerial Level** : Business economics helps thc management in getting information for managerial decision and future planning.
8. **Integrated Approach** : Business economics establishes co-ordination between economic principle and their practical aspects. On the basis of such co-ordination business economics holds an important place in business and commercial area.

Nature of Business Economics

Business economics is micro-economics in nature. Business economics is concerned with normative micro-economics not with positive micro-economics. Business economics concentrates on making economic theories application-oriented. Business economics takes the help of macro-economics so as to understand the external conditions which are relevant to business :

1. **Business Economics as a 'Science'** : 'Science' establishes relationship between causes and objects. It provides an analytical study of a subject. It gives knowledge about the causes and effects of an event. In this reference, it can he said without any doubt that business economics is a science. Following arguments can be given in its support :
   (i) Necessary data and their perfect analysis is done in business economics for decision-making and forward planning.
   (ii) It contains several economic laws and principles.
   (iii) Its laws are universal.

It should be noted that business economics is not a perfect science, in fact, it is a social science which studies business behaviour.

(a) **Business Economics as a Positive Science :** 'Positive science' is that branch of science which relates with the view 'what is to be done'. It does not give any solution and procedure for any problem or act. On this basis, it is agreed that business economics is a positive science because it gives help in the study of different aspects of a firm. Such as determination of production value, total cost, per unit cost and profit ratio, etc.

(b) **Business Economics as a Normative Science :** 'Normative Science' is that branch of science which studies 'what should be done.' In fact, it provides a solution to the problem. On this basis it can be understood that normative science suggests a way or procedure to be adopted for performing an act or solving a problem in order to achieve main objectives of the business. So many businessmen feel a problem in respect of their demand of products, price of the product and profit level to be fixed in order to face market competitions. These all problems are well analysed with the help of business economics as a normative science.

2. **Business Economics as an Art :** 'Art' as a knowledge suggests the best possible way of performing a duty. According to **Keynes,** "An art is a system of rules for the attainment of a given end." Business economics suggests a procedure to the business management for better utilization of limited resources. It helps to the management in adoption best alternative among the different alternatives. It gives proper direction to the business manages for the attainment of both motive of science and art. Now, it can undoubtedly be said that business economics is an art and science both.

Q.5. Discuss the advantages of business economics.

Ans.

Advantages of Business Economics

In modern business, business economics has an important place in business activities. Its knowledge is a sound step for gaining success in a business. The main object of business and industrial enterprise is to maximise the profit of the organisation. To achieve this object management authorities have to take proper business decision time to time, therefore, it is necessary that managerial persons must have the clear understanding of business economics which is quite helpful in proper decision-making. In fact, business economics helps in solving the economic problems of a firm by practical application of economic theories. Thus, business economics is the study of economic principles and techniques which are useful in solving the financial problems of a firm.

1. **Minimises, Risk and Uncertainties :** Risk and uncertainties both exist everywhere in business environment. These both factors can ruin a business if these are not pre-estimated. Risk and uncertainty cannot be completely abolished but these can be minimized to a certain limit. In business economics, with the help of accurate forecasting and future planning, risks and uncertainties both can be brought up to a minimum limit.

2. **Helpful in Forecasting :** Forecasting is an important element of business economics. With the help of forecasting the profits of a business can be maximised. Business economics helps a management to forecast successfully in respect of demand of the product, cost of the product and profit ratio on the sale of the product.

3. **Controlling Economic Activities :** Efficient control on business activities is necessary to obtain business objectives. Business economics contributes considerably to the managerial process of controlling. Cost control, quality control, wastage control, etc. are the main aspects of controlling.
4. **Helpful in Planning and Decision.-making :** An important function of business economics is to help in future planning and decision-making process. This branch of economics gives a perfect knowledge to the management regarding mathematical and statistical techniques.
5. **Determination of Business Policies :** On the basis of economic analysis management determines business policies. These policies are helpful in selecting the best option of decision. Business economics plays an important role in determination of different business policies like price policies, cost determination policies, profit policies, control policies, investment policies, import-export policies, etc.
6. **Helpful in Organisational Activities :** Sometimes organisational structure of a business is changed for the successful execution of future plans. For this purpose, business economics helps to a great extent in allocating liabilities and powers among different departments with a view to make them liable in future.
7. **Analysis of External Forces :** Every business either big or small is affected by external forces. National and International policies affect business policies, efficiency and profit earning capacity of a business. Trade cycles, licensing policies, monetary policies, industrial policies, tariff policies, taxation policies, etc,. affect the business activities. Business economics analyses these policies and also considers their affect on business activities.
8. **Fulfilment of Social Responsibilities :** Success of a business can be measured on the basis of social responsibilities of a business. A business can be considered successful only when it bears its responsibilities towards different sections of the society. Business economics gives proper knowledge to the management to understand the duties regarding social responsibilities and also helps in determination of such policies which may be helpful in performing such business activities which are beneficial for society.

Q.6. Discuss the scope of business economics

Ans.

Scope of Business Economics

Following aspects are studied under the scope of business economics :

1. **Theory of the Firm :** If firm can be considered a combination physical and financial resources with several informations, firms exist; because they perform useful functions in society by producing and by distributing goods and services. In the process of accomplishing this object they employ society's limited resources, provide employment and pay taxes. In the nature of business economics, objects, prnciples and working procedures of firms all are studied deeply.
2. **Demand Analysis and Forecasting :** Analysis of demand is undertaken to forecast demand which is a fundamental component of business economics. Demand forecasting is important because an estimate of future sales is primary for preparing production schedule and employing productive resources. Demand analysis helps the management in identifying factors which influence the demand for the products of a

firm. In business economics law of demand, elasticity of demand, factors determining demand and demand forecasting all these aspects are well analysed. Thus, demand analysis and forecasting keeps an important place in business economics.

3. **Cost and Production Analysis :** Production and cost analysis is a centre for the unhampered functioning of the production process and for project planning. Production is an economic activity that makes goods available for consumption. It is the process of creating goods and services by utilizing various available resources. To obtain such production level, some cost have to be incurred. At this point, the management is engaged with the task of determining an optimal level of production where the average cost of production would be minimum. Thus Business economics plays an important role in analysing cost and production theory of a firm.
4. **Study of Competition :** Modern age of business is the age of competition. Every businessman competes with each other and wants ride on the back of his competitors. In this reference, business economics studies and analyses the effects of different competitive conditions which can be harmful for business success and planning.
5. **Study of Pricing Practices and Policies :** Theory of exchange is popularly known as 'price theory'. Price determination under different types of market conditions comes under the span of this theory. Price theory is pivotal in determining the price policy of a firm. Pricing is considered as an important element of business economics. Price policy impresses upon the demand of products. It involves the determination of prices under different market conditions, pricing method, pricing policies, differential pricing and price forecasting. These all aspects are included in the scope of business economics.
6. **Study of Consumer's Behaviour :** The role of consumers in an economy is of vital importance, since consumers spend most of their incomes on goods and services produced by the firms. Consumers consume what firms produce. Thus, study of the theory of consumer's behaviour is studied with importance in the scope of business economics.
7. **Profit Management :** Every business and industrial enterprise aims at maximising its profit. Profit is the difference between total revenue and total economic cost. Profitability of an organisation is greatly affected by the following factors :
   (i) Demand of the production,
   (ii) Prices of the factors of production,
   (ii) Nature and degree of competition in the market,
   (iv) Price behaviour under changing conditions.

   These all factors are the integral parts of the scope of business economics.
8. **Study of Various Aspects :** To solve the various problems of a firm techniques, decision, policies, etc. are applied time-to-time. For this purpose several aspects like—cost accounting, business taxation, statistics are well studied in business economics.
9. **Capital Management :** Capital management means to make efficient control over the planning of capital expenditure. Cost of capital, capital budgeting, capitalisation are the inseparable aspects of the scope of business economics. A business economist studies these aspects carefully and informs to the management about their profitability and non-profitability to the firm.

Q.7. Discuss various types of price elasticity of demand.

Ans. Types of Price Elasticity or Degrees of Price Elasticity

There are five types of price elasticity of demand (Degree of elasticity of demand). Such as perfectly elastic demand, perfectly inelastic demand, relatively elastic demand, relatively inelastic demand and unitary elastic demand.

1. **Perfectly Elastic Demand :** In perfectly elastic demand a small rise in price on the part of the seller reduces the demand to zero.

   "Perfectly elastic demand is said to happen when a little change in price leads to an infinite change in quantity demanded."

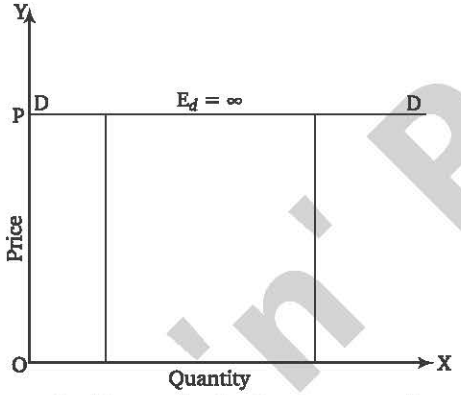


Fig. (a) : Perfectly Elastic Demand

   In such a case, the shape of the demand curve will be horizontal straight line as shown in fig. (a)

   The fig. (a) shows that when the price is OP, the demand is infinite. A slight rise in price will contract the demand to zero. A slight fall in price will attract more consumers but the elasticity of demand will remain infinite. But in real world, the cases of perfectly elastic demand are rare and are not of any practical interest.

2. **Perfectly Inelastic Demand :** In this case elasticity of demand becomes zero. "Demand is said to be perfectly inelastic when quantity demanded does not react to changes in price."

   For example, a 20% rise in or fall in price leads to no change in the quantity demanded. For instance, if price falls from P to P_2 or rise P to P_1 the expectations are that quantity demanded of the particular good will rise. Unfortunately if the rise in price leaves quantity demanded unchanged, that is known as imperfect elasticity of demand.

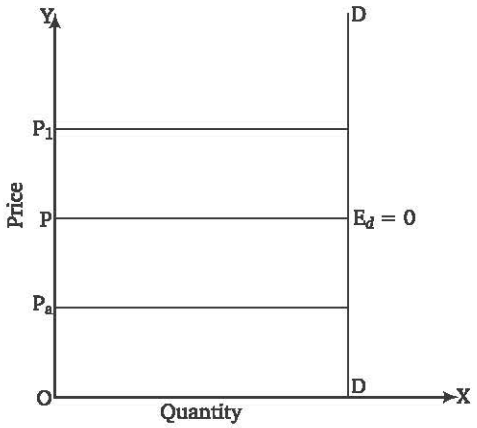


Fig. (b) : Perfectly Inelastic Demand

3. **Unitary Elastic Demand :** Marshall calls it unit elastic. The numerical value of unitary elastic demand is exactly one *i.e.*, $E_d = 1$.

"The demand is said to be unitary elastic when a given proportionate change in the price level brings about an equal proportionate change in quantity demanded."

In fig. (c), DD demand curve represents unitary elastic demand. This demand curve is called rectangular hyperbola. When price is OP, the quantity demanded is OQ. Now price falls to OP_1, the quantity demanded increases to OQ_1. The shaded area in the fig. equal in terms of price and quantity demanded denotes that in all cases price elasticity of demand is equal to one.

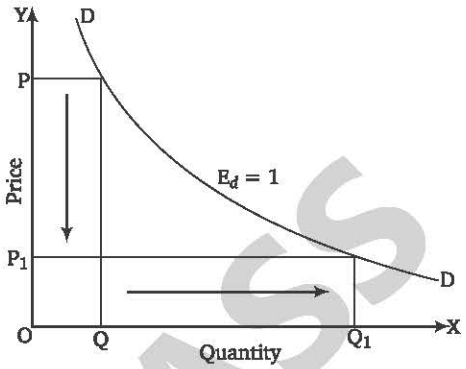


Fig. (c) : Unitary Elastic Demand

4. **Relatively Elastic Demand :** In such a case elasticity of demand is said to be more than one. Here a small change in price leads to very big change in quantity demanded. In this case demand curve will be fatter one and $E_d > 1$.

"Relatively elastic demand refers to a situation in which a small change in price leads to a big change in quantity demanded."

This has been shown in fig. (d). In fig. , given aside, DD is the demand curve which indicates that when price is OP, the quantity demanded is OQ, now the price falls from OP to OP_1, the quantity demanded increases from OQ to OQ_1 *i.e.,* quantity demanded changes more than the change in price.

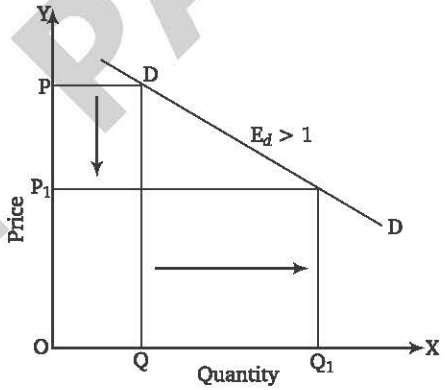


Fig. (d) : Relatively Elastic Demand

5. **Relatively Inelastic Demand :** Under the relatively inelastic demand a given percentage change in price produces a relatively less percentage change in quantity demanded. In such a case elasticity of demand is said to be less than one as shown in fig. given below.

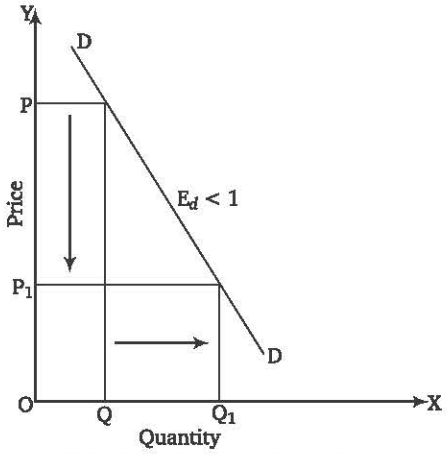


Fig. (e) : Relatively Inelastic Demand

Q.8. Discuss the 'total expenditure method' of measurement of price elasticity of demand.

Ans.

Total Expenditure Method

Dr. Marshall has evolved the total expenditure method to measure the price elasticity of emand. According to this method, elasticity of demand can be measured by considering the change in price and the subsequent change in the total quantity of goods purchased and the total amount of money spend on it.

Total Expenditure = Price × Quantity Demanded.

There are three possibilities :

1. If with a fall in price (demand increases) the total expenditure increases or with a rise in price (demand falls) the total expenditure falls, in that case the elasticity of demand is greater than one *i.e.*, $E_d > 1$.
2. If with a rise or fall in the price (demand falls or rises respectively), the total expenditure remains the same, the demand will be unitary elastic i.e., $E_d = 1$.
3. With a fall in price (Demand rises), the total expenditure also falls, and with a rise in price (Demand falls) the total expenditure also rises, the demand is said to be less elastic or elasticity of demand is less than one *i.e.*, $E_d < 1$.

   Table Representation: The method of total expenditure has been explained with the help of Table :

Table

Price (P)	Quantity Demanded (Q)	Total Expenditure	Elasticity of Demand (E_d)
10	1	10	
9	2	18	
8	3	24	$E_{d>1}$
7	4	28	
6	5	30	
5	6	30	$E_{d=1}$
4	7	28	
3	8	24	
2	9	18	
1	10	10	$E_{d<1}$

In the above, Table, we find three possibilities :

1. **More Elastic Demand :** When price is ₹10, the quantity demanded is 1 unit and total expenditure is ₹ 10. Now price falls from ₹ 10 to ₹ 6, the quantity demanded increases from 1 to 5 units and correspondingly the total expenditure increases from ₹ 10 to ₹ 30. Thus it is clear that with the fall in price, the total expenditure increases and vice-versa. So elasticity of demand is greater than one or $E_d > 1$.

   Example :

   Initial Price (P_1) = ₹ 6 Initial demand (Q_1) = 100 units

   Changed Price (P_2) = ₹ 5 Changed Price (Q_2) = 200 units

Solution :

Initial Total Expenditure $= P_1 \times Q_1 = 6 \times 100 = ₹\ 600$

Changed Total Expenditure $= P_2 \times Q_2 = 5 \times 200 = ₹1{,}000$

In the above example, total expenditure increases to ₹1,000 while price reduces to ₹5. In the same example, total expenditure is ₹1,000 at a price of 5 while it reduces to ₹600 at the increased price ₹6. Now it is clear that total expenditure increase when price decreases and total expenditure decreases when price increases. So elasticity of demand will be e > 1.

2. **Unitary Elastic Demand :** If price is ₹6, demand is 5 units so the total outlay is ₹30. Nov price falls to ₹5, the demand increases to 6 units but the total expenditure remains the same i.e., ₹30. Thus it is clear that with the rise or fall in price, the total expenditure remains the same. The elasticity of demand in this case is equal to one or $E_d = 1$.

Example :

Initial price $(P_1) = ₹8$, Initial Demand $(Q_1) = 600$ units

Changed Price $(P_2) = ₹6$ Changed Demand $(Q_2) = 800$ units

Calculate price Elasticity of Demand

Solution :

Initial Total Expenditure $= P_1 \times Q_1$

$= 8 \times 600 = ₹4{,}800$

Changed Total Expenditure $= P_2 \times Q_2$

$= 6 \times 800 = ₹4{,}800$

i.e., total expenditure remains unchanged. So price elasticity is equal to unit ($e = 1$).

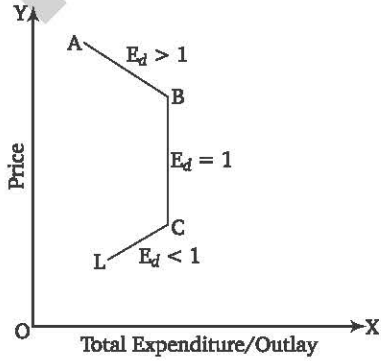


Fig. : Total xpenditure method

3. **Less Elastic Demand :** If price is ₹5, demand is 6 and total outlay is ₹30. Now price falls from ₹5 to ₹1. The demand increases from 6 units to 10 units and hence the total expenditure falls from ₹30 to ₹10. Thus, it is clear that with the fall in price, the total expenditure also falls and vice-versa. The above three possibilities shown in the given Figure.

Example :

Initial Price $(P_1) = ₹2$ Initial Demand $(Q_1) = 500$ units

Changed Price $(P_2) = ₹1$ Changed Demand $(Q_2) = 600$ units

Solution :

Initial Total Expenditure $= P_1 \times Q_2 = 2 \times 500 = ₹1{,}000$

Changed Total Expenditure $= P_2 \times Q_2 = 1 \times 600 = ₹600$

In the above example, the total expenditure reduces to ₹600 at the reduced price ₹1. On the contrary, in the same example total expenditure increases while the price increases. So elasticity demand is less than unit ($e < 1$).

Q.9. Compare the Kautilya's Arthashastra with modern economics.

Ans.

Comparison of Kautilya's Arthashastra with Modern Economics

Following points highlight the comparison between Kautilya's Arthashastra and modern economics.

1. **Demand and Supply :** Kautilya was very much familiar with the modern days' core concepts of economics of demand and supply and its combined influence on

determination of price. A king, in his opinion should not arbitrarily fix the price of a product without regard to its supply and demand situations. Without proper consideration of demand and supply, price cannot be claimed to be an equilibrium price which can maximize the welfare of consumers and producers. This idea is quite similar to the 'invisible hand' of Adam Smith, the Father of modern economics. Kautilya was also aware of the monopoly elements and hence, he tried to set the profit limit that take care of both. Businessmen were allowed to 5 to 10 per cent profit in their operations (Sarkar, 2000). The existence of state owned business and private business were seen in the age of Kautilya. Hence, the conflict of interests between them is natural. But he prescribed the policy to remove this type of conflict by suggesting some parity in prices such a way that it should not stifle the incentive for the private sector. State, according to Kautilya, should not dictate the prices without consideration of cost of production, the ratio of supply to demand, the reasonable level of profit etc. In the situation of glut (over production) state was expected to intervene and centralize the sales of product so that price should not fall from a certain minimum level which is popularly known as price floor in modern days (Kangle, 1960).

2. **International trade :** Like **Ricardo** and other modern western economists **Kautilya** had strong faith on the advantages of international trade. He believed that foreign trade could increase the prosperity of the trading countries. He strongly encouraged foreign trade and sent experts to study foreign markets so that commodities be classified into exportable and importable groups. He envisaged greater consumption possibility and economic gains through encouraging the foreign trades. However, in the Kautilya regime foreign trade was restricted.
3. **Interest and Profit (A Function of Risk, Uncertainty and Productivity):** Kautilya incorporated risk and uncertainty to the levels of profit and interest. He had indicated that the higher level of risk and uncertainty must be rewarded by higher profits and interests. He prescribed the allowable profits on imports to be twice of that on domestic goods. Allowable profits on imports was 10 per cent whereas it was 5 per cent on domestic products. The reason behind this was clear. In those days, the importers of foreign goods had to face great danger of being robbed and looted at the time of shipment of the products from other states (Sen, 1967). Kautilya's concept of profit is quite similar to the modern days profit theory of **Knight** which states that profit is the reward of uncertainty. Kautilya favoured charging interests on loans but the rate of interest was regulated by the state. According to him, rate of interest should be determined by two factors-risk involved and productivity of the capital. The rate of interest was higher for the traders however, it was lower for the personal purpose, such as, marriage or funeral etc. purposes.

   Furthermore, interest rate was different for different types of trades depending on the riskiness of the venture, Hence, it is observed that determination of interest rate considered both elements — risk and productivity of the loan. Human consideration of interest payment was also observed. Certain groups of people, such as, inability to pay, students etc. were exempted from paying interest. However, they had to come through proper legal system to avail such exemption. Hence, differentiated interest rate structure depending on the purpose of loan were prevailed at that time which is very much similar to modern days borrowing and lending system of banks and financial institutions (Sarkar, 2000).

4. **Tax Structure :** Kautilya's Arthashastra shows a very nice fiscal prudence for addressing economic, political and administrative problems. He advocated taxing power of the state to be limited and taxes should be equitable and just. According to him tax should not be heavy and excessive. He suggested tax rates should not exceed 16 per cent to 20 per cent ($(1/6^{th}$ or $1/5^{th}$) of the economic activities. He was aware that taxes beyond a certain limit would hamper economic activities and could encourage tax evasion. He, however, advised tax rate up to 50 per cent or more for some goods or services which were harmful for the society in nature. Moreover, it is worth mentioning that most of the taxes were levied on land and on various commodities. The existence of income tax was rarely found except for singers, dancers, prostitutes, spies of neighbouring states, etc. In such cases taxes were up to 50 per cent or more of their income earned. The moderate rate of tax such as 16 — 20 per cent was a prudent policy to avoid tax evasion and black money (Mehata, 1998).

   Hence, it is observed that Kauitlya's concept of tax is quite similar to the modern progressive direct tax structure system. Even today many developing countries follow the concept of exemption of tax on agricultural land. His concept of higher taxes on malicious items for the society is still pertinent today. In today's world also most of the countries follow heavy tax burden policy on cigarettes, liquor, etc. which are harmful for the society.

   Kauitlya, in his Arthashastra presented detailed outline about tax system related to tax administration, tax structure and the purpose of taxation. In his treaties, he referred eighteen ministers were required for overall administration of the state. Out of them two ministers were in charge of the taxation department (sulka). The word 'sulka' was used in "Atharvaveda" to mean tax in general sense (Atharvaveda 11, 29.3) payable by the traders. Kautilya used two terms `Samaharta' and ' Samindhata' in relation to explain ministry of taxation or revenue. Samaharta is considered as chief of tax collection and other revenues. Samaharta was also responsible for monitoring the ways to constitute the gross income from the land from tariff revenues. On the other hand the responsibilities of Samindhata was the construction and maintenance of Panyagrha' (store house for the products produced by the states for sale) and `Kasthagara' (store house of food production). He also mentioned ' Sulkadhyaksa' who was the chief of the tariff department. Thus, it is evident that there was an excellent tax imposition and collection system in those days (Sen, 1999). In the budgetary front he was in favour of surplus budget. He pointed out that if a king keeps close eye on balancing income and expenditure of a state, never face financial crisis (Arthashastra 5-2). Apart from that adequate treasury was also considered as one of the seven elements of sovereignty of a state (Thakur & Sah, 2004). Kauitlya also emphasized on the role of intelligence department. According to him, a kingdom cannot be successful only with the administrative officers. In Arthashastra he mentioned that intelligence department was responsible for preventing economic offences. He was also concerned about the expenditure side of the budget. He suggested aggregate wage bill of the state must not exceed one-fourth of the total revenue. He advocated differential wage rates depending on skill, quality of work and nature of jobs. In Arthashastra there was a definite attempt to structure a wage policy based on the realistic concepts and knowledge of economic, social and political factors (Sarkar, Sam 2000).

4. **Conclusion :** The entire description shows that economic ideas of Kautilya is based on certain scientific principles. Arthashastra is a great expression of setting guidelines for state management. In the Fourth Century B. C. he realized that economics cannot be kept aside in seeking solution of any social problem of a state. Although, unlike Adam Smith and other western economists, Kautilya did not write a book on economics as such, he expressed his economic philosophy in managing state activities is equally important with the thoughts of many modern days' economic philosophers. Hence, this great philosopher as well as statesman must have a prominent place among the gems of the history of economic thoughts.

Q.10. Explain the various factors determining price elasticity of demand.

Ans. Factors Determining Price Elasticity of Demand

The factors that determine elasticity of demand are numberless. But the most important among them are the nature, uses and prices of related goods and the level of income. They are stated below :

1. **Nature of the commodity :** Generally, all commodities can be divided into three categories, *i.e.* :
   (i) **Necessaries of Life :** For necessaries of life the demand is inelastic because people buy the required amount of goods whatever their price. For example, necessaries such as rice, salt, cloth are purchased whether they are dear or cheap.
   (ii) **Conventional Necessaries :** The demand for conventional necessaries is less elastic or inelastic. People are adapted to use of goods like intoxicants which they purchase at any price. For example, drunkards consider opium and wine almost as a necessity as food and water. Therefore, they buy the same amount even when their prices are higher and highest.
   (iii) **Luxury Commodities :** The demand for luxury is usually elastic as people buy more of them at a lower price and less at a higher price. For example, the demand of luxuries like silk, perfumes and ornaments increases at a lower price and diminishes at a higher price. Here, we must keep in mind that luxury is a relative term, which varies from person to person, place to place and from time to time. For example, what is a luxury to a poor man is a necessity to the rich. The luxury of the past may become a necessity of today. Similarly a commodity which is a necessity to one class may be a luxury to another. Hence, the elasticity of demand in such cases should have to be carefully expressed.
2. **Substitutes :** Demand is elastic for those goods which have substitutes and inelastic for those goods which have no substitutes. The availability of substitutes, thus, determines the elasticity of demand. For instance, tea and coffee are substitutes. The change in the price of tea affects the demand for coffee. Hence, the demand for coffee and tea is elastic.
3. **Number of Uses :** Elasticity of demand for any commodity depends on its number of uses. Demand is elastic if a commodity has more uses and inelastic if it has only one use. As coal has multiple uses, if its price falls, it will be demanded more for cooking, heating, industrial purposes, etc. But if its price rises, minimum will be demanded for every purpose.

4. **Amount of Money Spent on the Commodity :** Where an individual spends only a small portion of his income on the commodity, the price change does not materially affect the demand for the commodity, and the demand is inelastic (match box, salt, etc.).
5. **Postponement :** Demand is more elastic for goods, the use of which can be postponed. For example, if the price of silk rises, its consumption can be postponed. The demand for silk is, therefore, elastic. Demand is inelastic for those goods the use of which is urgent and, therefore, cannot be postponed. The use of medicines cannot be put off. Hence, the demand for medicines is inelastic.
6. **Price Level :** The demand is elastic for moderate prices but inelastic for lower and higher prices. The rich and the poor do not bother about the prices of the goods that they buy. For example, rich buy Banaras silk and diamonds, etc. at any price. But the poor buy coarse rice, cloth, etc. whatever their prices are.
7. **Income Level :** The demand is inelastic for higher and lower income groups and elastic for middle income groups. This rich people with their higher income do not bother about the price. They may continue to buy the same amount whatever the price. The poor people with lower incomes buy always only the minimum requirements and, therefore, they are induced neither to buy more at a lower price nor less at a higher price. The middle income group is sensitive to the change in price. Thus, they buy more at a lower price and less at higher price.
8. **Habits :** If consumers are habituated of some commodities, the demand for such commodities will be usually inelastic. It is because that the consumer will use them even their prices go up. For example, a smoker does not smoke less when the price of cigarette goes up.

Q.11. Discuss in detail about Law of Diminising Marginal utility. Also discuss its assumptions, limitations and importance.

Ans.

Law of Diminising Marginal Utility

Other things remaining the same when a person takes successive units of.a commodity, the marginal utility diminishes constantly.

The marginal utility of a commodity diminishes at the consumer gets larger quantities of it. Marginal utility is the change in the total utility resulting from one unit change in the consumption of a commodity per unit of time.

Assumptions:

Following are the assumptions of the law of diminishing marginal utility.

1. The utility is measurable and a person can express the utility derived from a commodity in qualitative terms such as 2 units, 4 units and 7 units, etc.
2. A rational consumer aims at the maximization of his utility.
3. It is necessary that a standard unit of measurement is constant.
4. A commodity is being taken continuously. Any gap between the consumption of a commodity should be suitable.
5. There should be proper units of a good consumed by the consumer.
6. It is assumed that various units of commodity homogeneous in characteristics.
7. The taste of the consumer remains same during the consumption of the successive units of commodity.

8. Income of the consumer remains constant during the operation of the law of diminishing marginal utility.
9. It is assumed that the commodity is divisible.
10. There should be not change in fashion. For example, if there is a fashion of lifted shirts, then the consumer may have no utility in open shirts.
11. It is assumed that the prices of the substitutes do not change. For example, the demand for CNG increases due to rise in the prices of petroleum and these price changes effect the utility of CNG.

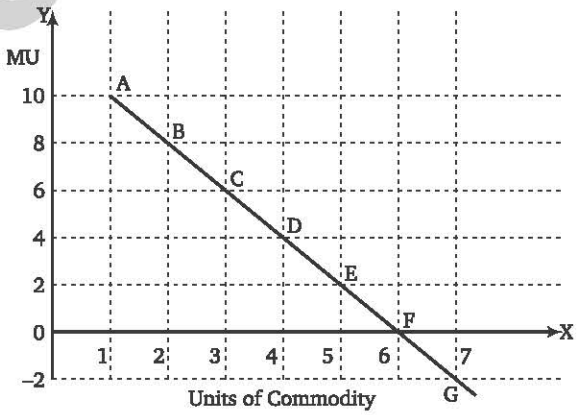
Explanation With Schedule and Diagram:

We assume that a man is very thirsty. He takes the glasses of water successively. The marginal utility of the successive glasses of water decreases, ultimately, he reaches the point of satiety. After this point the marginal utility becomes negative, if he is forced further to take a glass of water. The behaviour of the consumer is indicated in the following schedule:

Units of Commodity	Marginal Utility	Total Utility
1st glass	10	10
2nd glass	8	18
3rd glass	6	24
4th glass	4	28
5th glass	2	30
6th glasss	0	30
7th glass	– 2	28

On taking the 1st glass of water, the consumer gets 10 units of utility, because he is every thirsty. When he takes 2nd glass of water, his marginal utility goes down to 8 units because his thirst has been partly satisfied. This process continues until the marginal utility drops down to zero which is the saturation point. By taking the seventh glass of water, the marginal utility becomes negative because the thirst of the consumer has already been fully satisfied.

The law of diminishing marginal utility can be explained by the following diagram drawn with the help of above schedule:



In the above figure, the marginal utility of different glasses of water is measured on the y-axis and the units (glasses of water) on X-axis. With the help of the schedule, the points A, B, C, D, E,

F and G are derived by the different combinations of units of the commodity (glasses of water) and the marginal utility gained by different units of commodity. By joining these points, we get the marginal utility curve. The marginal utility curve has the downward negative slope. It intersects the X-axis at the point of 6th unit of the commodity. At this point "F" the marginal utility becomes zero. When the MU curve goes beyond this point, the MU becomes negative. So there is an inverse functional relationship between the units of a commodity, and the marginal utility of that commodity.

Exceptions or Limitations : The limitations or exceptions of the law of diminishing marginal utility are as follows:

1. The law does not hold well in the rare collections. For example, collection of ancient coins, stamps, etc.
2. The law is not fully applicable to money. The marginal utility of money declines with richness but never falls to zero.
3. It does not apply to the knowledge, art and innovations.
4. The law is not applicable for precious goods.
5. Historical things are also included in exceptions to the law.
6. Law does not operate if consumer behaves in irrational manner. For example, drunkard is said to enjoy each successive peg more than the previous one.
7. Man is fond of beauty and decoration. He gets more satisfaction by getting the above merits of the commodities.
8. If a dress comes in fashion, its utility goes up. On the other hand its utility goes down if it goes out of fashion.
9. The utility increases due to demonstration. It is a natural element.

Importance of the Law of Diminishing Marginal Utility : The importance or the role of the law of diminishing marginal utility is as follows:

1. By purchasing more of a commodity the marginal utility decreases. Due to this behaviour, the consumer cuts his expenditures to that commodity
2. In the field of public finance, this law has a practical application, imposing a heavier burden on the rich people.
3. This law is the base of some other economic laws such as law of demand, elasticity of demand, consumer surplus and the law of substitution, etc.
4. The value of commodity falls by increasing the supply of a commodity. It forms a basis of the theory of value. In this way prices are determined

Q.12. An investigations into the demand of Colour T.V. sets in the following towns has supplied the following data :

Towns	Population ('000)	Demand for Colour T.V. Sets
A	12	16
B	15	28
C	15	28
D	18	31

E	18	35
F	22	39
G	26	47

Estimate the number of colour T.V. sets demanded in H town with a population of 30 thousand.

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Population of the town in	Number of T.V. sets demanded	Square of x	Product of Population and demand
x	y	x^2	xy
12	16	144	192
15	28	225	420
15	28	225	420
18	31	324	558
18	35	324	630
22	39	484	858
26	47	676	1,222
$\Sigma x = 126$ $N = 7$	$\Sigma y = 224$	$\Sigma x^2 = 2402$	$\Sigma xy = 4{,}300$

$$y = a + bx \quad \Rightarrow \quad \Sigma y = n.a + b.\Sigma x$$

$$\Sigma xy = a.\Sigma x + b.\Sigma x^2 \quad \Rightarrow \quad 224 = 7a + 126b$$

$$4300 = 126a + 2402b$$

Multiply of equation 1 by 18

$$4032 = 126a + 2268b \quad \Rightarrow \quad 4300 = 126a + 2402b$$

$$-268 = 124b \quad \Rightarrow \quad b = \frac{268}{134} = 2$$

Putting values of b in equation 1.

$$224 = 7a + 12612 \quad \Rightarrow \quad 224 = 7a + 252$$

$$7a = 252 - 224 \quad \Rightarrow \quad 7a = 28$$

$$a = \frac{28}{7} = 4 \quad \Rightarrow \quad Y = 4 + 2x$$

$$Y = 4 + 2(30) \quad \Rightarrow \quad Y = 4 + 60 = 64$$

Q.13. On the analysis of demand of fans in 5 cities following results are obtained :

Cities	Population of City (in lakh)	Demand of Fans (00)
L	5	45
M	7	65
N	8	55
O	11	75
P	14	95

Fit a linear regression of y on x and estimate the demand of fans for a city having a population of 20 lakh.

Sol.

Population of the Town in	Number of Fans Demanded	Square of x	Product of Population & Demand
x	y	x^2	xy
5	45	25	225
7	65	49	455
7	55	64	440
11	75	121	825
14	95	196	1,830
$\Sigma x = 45$ N = 5	$\Sigma y = 335$	$\Sigma x^2 = 455$	$\Sigma xy = 3{,}275$

$$Y = a + bx \quad \Rightarrow \quad \Sigma y = n.a + b.\Sigma x$$

$$\Sigma xy = a.\Sigma y + b.\Sigma x^2 \quad \Rightarrow \quad 335 = 5a + 45b$$

$$3275 = 45a + 455b$$

Multiply of equation 1 by 9

$$3015 = 45a + 405b \quad \Rightarrow \quad 3275 = 45a + 455b$$

$$260 = 50b \quad \Rightarrow \quad b = \frac{260}{50} = 5.2$$

Putting the value of b is equation

$$335 = 5a + 45\,(5.2) \quad \Rightarrow \quad 335 = 5a + 234$$

$$5a = 335 - 234 \quad \Rightarrow \quad 5a = 101$$

$$a = 20.2$$

Demand forecast for population of 20 lakh.

$$Y = 20.2 + 5.2\,(x) \quad \Rightarrow \quad Y = 20.2 + 5.2\,(20)$$

$$Y = 20.2 + 104 = 124.2$$

Q.14. Following table gives the data of sales for product group sales and product 'R' sales. Prepare sales forecast, separately for both for the year 2022:

Year	2018	2019	2020	2021
Product Group sales (in lakh ₹)	40	48	60	64
Product 'R' sales (in lakh ₹)	4	7.2	12	16

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Year	Time Deviation from mid of 2019 and 2020	Square of x	Product Group Sales (₹)		Product 'R' Sales (in lakh ₹)		% of Demand of Product 'R' to Product gr Demand
	x	x^2	Demand (Y)	xy	Demand (Y)	xy	
2018	-3	9	40	-120	4	-2	$\frac{4}{40} \times 100 = 10\%$

2019	– 1	1	48	– 48	72	– 7.2	$\frac{7.2}{48}\times 100=15\%$
2020	+ 1	1	60	60	12	12	$\frac{12}{60}\times 100=20\%$
2021	+ 3	9	64	192	16	48	$\frac{16}{64}\times 100=25\%$
N = 4	**$\Sigma x = 0$**	**$\Sigma x^2 = 20$**	**$\Sigma y = 212$**	**84**	**$\Sigma y = 39.2$**	**$\Sigma xy = 40.8$**	

Demand forecast for the year 2015 by least Square Method:

Product Group Demand

$$y = a + bx$$
$$a = \frac{\Sigma y}{N}$$
$$b = \frac{\Sigma xy}{\Sigma x^2}$$
$$a = \frac{212}{4}$$
$$a = 53$$
$$b = \frac{84}{4}$$
$$b = 4.2$$
$$y = 53 + 4.2\,(x)$$

Time Deviation (x) for 2022

$$y = 53 + [4.2 \times 5]$$
$$y = 53 + 21$$
$$y = ₹74$$

Product 'R' Demand

$$y = a + bx$$
$$a = \frac{\Sigma y}{N}$$
$$b = \frac{\Sigma xy}{\Sigma x^2}$$
$$a = \frac{39.2}{4}$$
$$a = 9.8$$
$$b = \frac{40.8}{20}$$
$$b = 2.04$$
$$y = 9.8 + 2.04x$$

Time Deviation x for 2022

$$y = 9.8 + [2.04 \times 5]$$
$$y = 9.8 + 10.2$$
$$y = ₹20$$

Q.15. The product group and product 'A' demand are given separately as follows :

Years	**2019**	**2020**	**2021**
Product Group Demand (₹)	75,000	1,20,000	1,05,000
Product 'A' Demand (₹)	15,000	30,000	31,500

Fit the linear trend by least square method and estimate the product group and product 'A' demand for the year 2022.

Sol.

Year	**Time Deviation from 2020**	**Square or *x***	**Product Group Demand**		**Product 'A' Demand**		**% of Demand of Product 'A' to Product group Demand**
	x	**x^2**	**Demand (in, 000 ₹) y**	***xy***	**Demand (in ₹) y**	***xy***	

2019	-1	1	75	-75	15,000	$-15,000$	$\frac{15000}{75000} \times 100 = 20\%$
2020	0	0	120	0	30,000	0	$\frac{30000}{120000} \times 100 = 25\%$
2021	1	1	105	105	31,500	31,500	$\frac{31500}{105000} \times 100 = 30\%$
N = 3	**$\Sigma x = 0$**	**$\Sigma x^2 = 2$**	**$\Sigma y = 300$**	**$\Sigma xy = 30$**	**$\Sigma y = 76,500$**	**$\Sigma xy = 16,500$**	

Demand forecast for the year 2020 by least Square Method

Product Group Demand

$y = a + bx$

$a = \Sigma \frac{y}{N} = \frac{300}{3} = 100$

$b = \Sigma x \frac{y}{\Sigma x^2} = \frac{30}{2} = 15$

$y = 100 + 15x$

Time deviation (x) for 2022

$y = 100 + [15 \times 2]$

$y = 100 + 30$

$y = ₹\ 130$ *or* 1,30,000

Product 'A' Demand

$y = a + bx$

$a = \Sigma \frac{y}{N} = \frac{76500}{3} = 25,500$

$b = \Sigma \frac{xy}{\Sigma x^2} = \frac{16,500}{2} = 8,250$

$y = 25,500 + 82,500x$

Time deviations (x) for 2022

$y = 25,500 + [8,250 \times 2]$

$y = 25,500 + 16,500$

$y = ₹\ 42,000$

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UNIT-II

Theory of Cost and Production Function

SECTION-A VERY SHORT ANSWER TYPE QUESTIONS

Q.1. Define the term 'Cost of production'.

Ans. **Cost of production** has been defined as "the total money outlay the entrepreneurs have to meet in order to attract different factors of production into their business. It includes the prices of raw materials, wages and salaries, interest payment on capital invested in the business, rent on buildings, normal earnings of management, payments of taxes and other trade expenses, marketing, advertising expenses, etc."

The **cost of production** of a given output is the total amount of money spent in making it. It is equal to the total remuneration paid to the factors of production engaged in producing it. In other words, it is the value of the factors of production used in producing that unit. It should be remembered that cost of production also includes the **'normal rate of profit'** of the entrepreneur.

Q.2. Discuss various features of opportunity cost.

Ans. Following are the main characteristics of oportunity cost :

1. Opportunity cost is expressed in the terms of monetary cost.
2. In opportunity cost, it is assumed that quantity of factors of production remains constant.
3. It is the assumption of opportunity cost that the economy has the stage of perfect competition.
4. The concept of opportunity cost applies for all types of industry and all factors of production.
5. Opportunity cost includes explicit and implicit cost.
6. Opportunity cost depends upon specialisation.
7. It is the assumption of opportunity cost that two commodities X and Y are being in the economy.

Q.3. Explain the advantages of opportunity cost.

Ans. The importance of opportunity cost may be explained as follows :

1. This concept is helpful in interpretating that a factor of production should get atleast the same return in any particular use, which it may get from some other alternative use.
2. The concept of opportunity cost explains the reason of change in the cost. It also explains the extent of changes.
3. With the help of the concept of opportunity cost we came to understand why any particular factor is functional in a particular production.

Q.4. What are the disadvantages of opportuinty Cost?

Ans. Following are the main limitations of opportunity cost :

1. Opportunity cost in not applicable in reference of specific factor.
2. The concept of opportunity cost assumes that particular factor of production has no specific liking. In practical life, it is wrong assumption.
3. The concept of opportunity cost is based on the assumption that all units of a factor are similar but it is not true.
4. The concept of opportunity cost is based on the assumption of perfect competition. In real life perfect competition does not prevail.

Q.5. Discuss the relation between Average Cost and Marginal Cost.

Ans. The relationship between AC and MC are the following :

1. If MC is below AC, then AC must be falling. This is because, if MC is below AC, then the last unit produced costs less than the AC of all the earlier units produced. If the last unit costs less than the earlier ones, then the new AC must be less than the old AC. Hence, AC must be falling.
2. If MC is above AC, then the cost of the last unit produced will be higher than the AC of the earlier units. Hence, the new AC must be higher than old AC. Therefore, when MC is above AC, AC must be rising.
3. If MC is equal to AC, the last unit costs exactly the same as the AC of all earlier units. Hence, the new AC is equal to old AC. Thus, the AC curve is flat when AC equals MC.

Q.6. What do you mean by implicit cost?

Ans. Implicit costs are the inputed value of the factors of production put in by the entrepreneur himself. It includes the normal returns on money. Capital invested by the entrepreneur, wages or salary for his services in his own firm, inputed rent if he is using his own land or building. In the words of **Leftwitch**, "Implicit costs arc costs of self-owned and self-employed resources." Thus from an economists' point of view, apart from explicit costs, there are implicit money costs, which are generally not considered by the accountant unless some special provision is made for it. An accountant considers only the explicit costs as costs— those which involves cash payment by the entrepreneur of the firm. But the economists take into consideration both the explicit and implicit costs. Thus,

Economic Costs = Explicit (Accounting) Costs + Implicit Costs.

Q.7. What is meant by opportunity cost?

Ans. Economists often define costs in terms of 'alternative costs' or 'opportunity costs'. The factors of production are not only scarce but they have alternative uses. Land can be used for cultivation of crops or for construction of a factory building. If a combination of various factor inputs are used to produce a certain amount of say 'X' commodity, the same combination of inputs can also be used to produce another good say 'Y'. Thus, when factor inputs are used in the production of 'X' commodity, it is clear that the opportunity to produce 'Y' commodity with same factor inputs has to be sacrificed. Hence, opportunity cost of 'X' commodity is the cost sacrificed in terms of 'Y' commodity which is the alternative of 'X'. **Richard Lipsey** defined opportunity cost in these words, "the cost of using something in a particular venture is the benefit forgone (or opportunity cost) by not using it in its best alternative use."

Q.8. What are the limitations of opportunity cost?

Ans. The concept of opportunity cost is not free from following limitations :

1. The doctrine cannot be applied to factors which are specific and which have no alternative uses. The transfer cost of such factors is zero.
2. The theory is based on the assumption of perfect competition, which is not found in reality.
3. There may be a difference between individual and social costs. A smoky factory in the heart of the town may involve large sacrifice of alternatives in the form of hazards to health which cannot be measured in money terms.
4. The foregone alternatives are often not clearly ascertainable due to modern complex productive system.
5. If factors are prevented from moving then their prices do not reflect opportunity cost.

SECTION-B SHORT ANSWER TYPE QUESTIONS

Q.1. What is meant by money cost?

Ans.

Money Cost

Ordinary, the term 'cost of production' refers to the money expenses incurred in the production of a commodity. Money cost, thus, is total money outlay of the firm which includes : (i) cost of raw materials, (ii) wages and salaries, (iii) power charges, (iv) rent of business or factory premises, (v) interest payments of capital invested, (vi) insurance premiums, (vii) taxes like property tax, excise duties, licence fees, etc., and (viii) miscellaneous business expenses like marketing and advertising expenses (selling costs), transport costs, (ix) normal profits of entrepreneurs, etc.

In short, money cost is the payment made for the factors in terms of money. Money cost may be of two types (i) explicit cost and (ii) implicit cost.

1. **Explicit Cost** : Explicit costs are the costs in terms of money expenditure of the factors of production hired or purchased by the entrepreneur. It would include wages paid to labour hired by the entrepreneur, interest paid on capital or rent paid on land. These costs are also called **accounting costs.**

   In the words of **Leftwitch,** "Explicit costs are those cash payments which firm make to outsiders for their services and goods."
2. **Implicit Cost** : Implicit costs are the inputed value of the factors of production put in by the entrepreneur himself: It includes the normal returns on money. Capital invested by the entrepreneur, wages or salary for his services in his own firm, inputed rent if he is using his own land or building.

In the words of **Leftwitch**, "Implicit costs are costs of self-owned and self-employed resources."

Thus, in the economic sense, there are certain costs which are implicit in nature, such as when there is an inputed value of goods and services used by the firm, but no direct payment is made for such use. Thus from an economists' point of view, apart from explicit costs, there are implicit money costs, which are generally not considered by the accountant unless some special provision is made for it. An **accountant** considers only the explicit costs as costs- those which involves cash payment by the entrepreneur of the firm. But the economists take into consideration both the explicit and implicit costs. Thus,

Economic Costs = Explicit (Accounting) Costs + Implicit Costs.

The distinction between explicit and implicit money costs is important in analysing the concept of profit. In the accounting sense, profit is calculated as the residual of total sales receipts *minus* total costs (in a explicit sense). But in the economic sense, a real business economic profit is the surplus of total revenue over the total economic cost.

Economic Profit = Total Revenue – Economic Costs.

Q.2. Explain the term 'Law of variable proportions'.

Ans.

Law of Variable Proportions

The law of variable proportions is the modern approach to the 'Law of Diminishing Returns (or The Laws of Returns). It is now usually called the Law of Variable Proportions. It can also be called the Law of Diminishing Marginal Product or Diminishing Marginal Returns or simply as Diminishing Returns. The law of variable proportions shows the production function with one input factor variable while keeping the other input factors constant.

The law of variable proportions states, "as the proportion of variable factor is increased, the total production at first increases more than proportionately, then proportionately and finally less than proportionately." The classical economists called it the Law of Diminishing Returns. They derived it by applying more and more labour to a fixed acreage of land, and thought of it as associated particularly with agriculture. But, it is a general principle that can be applied to any production operation.

According to **K.E. Boulding,** "As we increase the quantity of any one input which is combined with a fixed quantity of the other inputs, the marginal physical productivity of the variable input must eventually decline." According to **P.A. Samuelson**, "An increase in some inputs relative to other fixed inputs will in a given state of technology, cause output to increase but after a point the extra output resulting from the same additions of extra inputs will become less and less." *Marshall* defined the law by saying, "An increase in the capital and labour applied in the cultivation of land causes in general a less proportionate increase in the amount of product raised until it happens to coincide with an improvement in the art of agriculture."

It should be noted that Marshall recognizes that this law is applicable only in the short run when the technology can be assumed to be given and inputs can be combined only within a given range of combinations.

Q.3. What are the assumptions of law of variable proportions.

Ans.

Assumptions of Law of Variable Proportions

The law of variable proportion is valid with the following assumptions:

1. The technology remains constant. If there is an improvement in the technology, due to inventions, the average and marginal product will increase instead of decreasing.
2. There are two factors of production. One factor is variable and other factor is kept constant.
3. All the units of the variable factor are identical in all respects. They are of the same size and quality.
4. A particular product can be produced under varying proportions of the input combinations.
5. The law operates in the short run.

In short-period, when the production of an output is sought to be increased; by increasing an additional unit of variable factor to a given quantity of fixed factors, the law of variable proportions comes into operation. The law of variable proportions provides the result to varying the proportions of the fixed and variable factors of production. When the quantity of

one factor is increased while all other factors remain constant, then the proportion between the fixed and variable factors is altered.

Earlier, economists distinguished this law into three separate laws of returns; namely diminishing, increasing and constant returns. Modern Economist, however, stated that these are three different aspects of the same law, viz. 'Law of Variable Proportions'. There are three stages to this law in the following sequence:

1. Stage of Increasing Returns
2. Stage of Diminishing Returns
3. Stage of Negative Returns

Q.4. What do you mean by production?

Ans.

Production

Production is another important economic activity. It directly or indirectly satisfies the wants and needs of the people. Satisfaction of human wants is the objective of production.

Production is the conversion of input into output. The factors of production and all other things which the producer buys to carry out production are called inputs. The final goods and services produced are known as output. In economics, the term production is not the same as in common language where it is usually taken to mean 'creation' of something. In economics, the term production carries a wider connotation. It stands for creation of 'value', which can be of two varieties, namely 'use value' and 'exchange value'. Thus, production is the activity which creates or adds utility and value.

According to **Edwood Buffa**, "Production is a process by which goods and services are created."

Q.5. Explain the various factors of production.

Ans.

Factors of Production

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 organisation. Let us learn these factors of production in detail:

1. **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 utilised 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.
2. **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.
3. **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 equipments, 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.

4. **Enterprise :** Collecting, coordinating and utilising the factors of production for achieving economic gains is called an enterprise. An enterprise is an organisation 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.

Q.6. Explain the assumptions, uses and limitations of production function.

Ans. **Assumptions of Production Function**

Production function is based on the following assumptions :

1. Production function is related to a specific time period.
2. The state of technology is fixed during this period of time.
3. The factors of production are divisible into the most viable units.
4. There are only two factors of production, labour and capital.
5. Inelastic supply of factors in the short-run period.

Advantages of Production Function : The uses of production function are as follows:

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

Limitations of Production Function : Apart from the advantages, production function also suffers from some limitations, which are given as follows:

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

Q.7. Explain the Law of Variable Proportions. Also discuss the assumptions made under law of variable propartions.

Ans. **Law of Variable Proportions**

According to **E. 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."

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.

Assumptions made under Law of Variable Proportions

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

1. The state of technology is given and changed.
2. The prices of the inputs are given.
3. Labour is the variable input and capital is the constant input.
4. Let us understand the law of diminishing returns with the help of an example. Suppose, an organisation 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 organisation would be as follows :

   Q = f (L), K

   Q = Total Production

   L = Labour

   K = Capital (Constant)

Q.8. What is meant by expansion path? Discuss briefly.

Ans.

Expansion Path

Expansion path can be defined as the locus of all the points that show least combination of the factors corresponding to different levels of output. The expansion path is also called scale line as the expansion of the organisation is based upon the scale of operation.

As per **Stonier** and **Hague**, "expansion path is that line which reflects the least cost method of producing different levels of output, when factor prices remain constant." Let us learn the concept of the expansion path with the help of given figure.

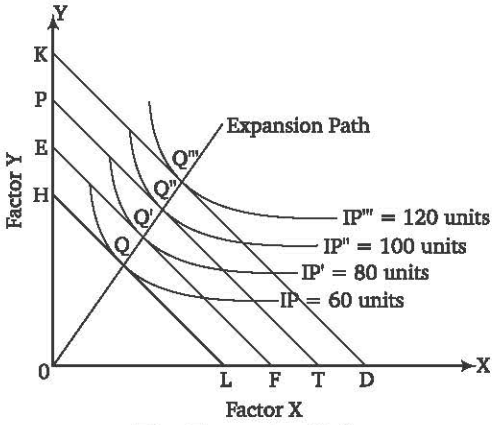


Fig : Expansion Path

As shown in figure, earlier the producer was producing 60 units of output. Suppose the producer wants to expand his/her production and wants to produce 80 units of output. The equilibrium would be achieved at the point Q', where the iso-cost line is tangent to an isoquant curve of IP'. Similarly, the equilibrium point for producing 100 and 120 units are Q" and Q"', respectively. When the points Q, Q', Q" and Q"' are joined, a straight line is obtained, which is called the expansion path.

Q.9. Explain returns to scale. Also discuss its assumptions.

Ans.

Returns to Scale

Returns to scale implies the behaviour of output when all the factor inputs are changed in the same proportion given the same technology.

In other words, the law of returns to scale explains the proportional change in output with respect to proportional change in inputs.

The assumptions of returns to scale are as follows :

1. The firm is using only two factors of production that are capital and labour.
2. Labour and capital are combined in one fixed proportion.
3. Prices of factors do not change.
4. State of technology is fixed.

There are three aspects of the laws of returns :

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

Q.10. Explain the external economies of scale.

Ans. **External Economies of Scale**

These economies are those which are reaped by a firm not on account of its own efforts and increase in its scale but on account of the expansion and growth of the industry to which it belongs and also on account of overall development of the economy and markets.

Some of the major sources of these economies are as under :

1. **Economies of Information :** Availability of information is cheaper when we consider the industry as a whole. A firm requires continuous information regarding the prices of inputs and its product, as also likely changes in them on account of shifts in government policies and other developments. If the industry as a whole sets up facilities for providing information through various means of communication, it is much cheaper, than if it is done by the firm alone. As a result, when the authorities or the industry as a whole provides means of information, it becomes economical for the firm to use the same sets up.
2. **Research and Development :** The results of research undertaken by the authorities or by the industry as a whole are economical for the firm to use. Also, it is generally commercially viable for a research organisation to undertake research on its own and sell the findings to individual firms on payment basis than for the firms to undertake the same individually.
3. **Economies of Concentration :** When an industry is concentrated in a certain locality or region, its firms get incidental saving in costs in the form of cheaper and more reliable services. These services cover, for example, repairs, consultancy, banking, credit, insurance, financial advice, packing, transport, housing, communication,, training, housing, health care, and so on. An individual firm is able to make use of these services at competitive and economical prices.
4. **Economies of Specialization :** When a number of associated and interlinked industries get located in the neighbourhood, they all provide support to each other and their costs come down. As a result, the individual firms also benefit from this development.

Q.11. Discuss the internal diseconomies of scale.

Ans. **Internal Diseconomies of Scale**

In the long run, a number of factors may cause an addition to average cost of a firm. These sources of diseconomies are directly or indirectly linked to the inability of the problems of

management which not only crop up when a firm is started, but keep increasing with its size Chamberlin terms them 'Complexities of Management'. Briefly these are as follows:

1. **Limits of Entrepreneurship :** A firm, by definition, can have only one unit of entrepreneurship though it can have a large number of units of every other input. Moreover, entrepreneurship, in the ultimate analysis, manifests itself in the form of decision-making human beings who have to bear the consequences of their decisions. Therefore, the willingness to take risk varies between individual entrepreneurs and between different situations. Very frequently, wrong or sub-optimal decisions are taken which result in avoidable costs. Similarly, with an increase in the size of the firm and its activities and departments, the entrepreneurship has to institute a system of delegating responsibility of assessing the ever-changing situation and taking on the spot decisions. It has also to set up an effective monitoring system. All this adds to the operating costs of the firm. In addition, it is found that on account of increase in the size of the firm, a number of additional departments may become necessary (such as a department which maintains leave accounts of the staff). As the administrative set up expands, delays set in and a number of avoidable expenses have to be undertaken.
2. **Managerial Autonomy :** With increasing size of the firm, various managerial wings (such as technical, financial, sales, marketing and others) have to be given sufficient autonomy of decision-making. The managers heading these departments, however, do not have a direct personal stake in the success of the firm. In addition, problems of coordination between various departments of the firm have to be tackled. The net result is often diseconomies of scale.
3. **X-inefficiency :** It is argued that the traditional theory is wrong in assuming that a firm always uses its resources in the best possible manner. This is because, in practice, most of the ground level decisions are taken by individual managers and other employees of the firm. And their motivation is advancement of their own careers rather than optimizing the performance of the firm. Quite frequently, they also lack adequate incentive to do their best. Unless there is a very sound system of 'reward and punishment' for each employee, their performance is likely to lack necessary motivation.

Q.12. What do you mean by external diseconomies of scale?

Ans. **External Diseconomies of Scale**

As in the case of external economies, external diseconomies of scale are thrust upon a firm by extraneous forces. They are not directly related to the growth in the size of the firm under consideration.

There are several reasons for the prices of inputs to move up or their quality to deteriorate. For example, the authorities may impose a tax on one or more inputs. Or there may be a wage revision in the industry or imposed by the authorities on the economy as a whole.

Similarly, it is also possible that prices of some imported inputs may go up because of one or more reasons including for example, custom duties imposed by the domestic government or by the exporting country or increase in cost of production abroad, etc.

It is possible that on account of war, strikes, some natural calamity, or quantitative restrictions imposed by domestic country or a foreign country, the availability of an essential input may become costlier or insufficient.

Q.13. Elaborate increasing returns to scale with the help of a figure.

Ans. It is a situation in which output increase by a greater proportion than increase in factor inputs. For example, to produce a particular product, if the quantity of inputs is doubled and the increase in output is more than double, it is said to be an increasing returns to scale. When there is an increase in the scale of production, the average cost per unit produced is lower. This is because at this stage an organisation enjoys high economies of scale. Figure given aside shows the increasing returns to scale :

As shown in the given figure, a movement from A to B shows that the amount of input is doubled. When labour and capital are doubled from 2 to 4 units, output increases more than double, that is, from 50 units to 120 units. This is increasing returns to scale, which occurs because of economies of scale.

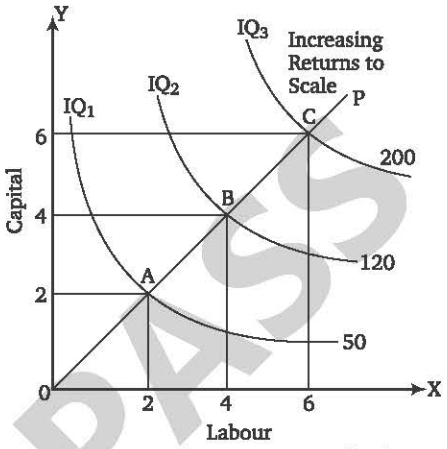


Fig : Increasing Returns to Scale

Q.14. Explain the constant returns to scale.

Ans. Constant Returns to Scale

A constant return to scale implies the situation in which an increase in output is equal to the increase in factor inputs. For example in the case of constant returns to scale, when the inputs are doubled, the output is also doubled. Figure given aside shows the constant returns to scale:

As shown in the given figure, a movement from A to B shows that the amount of input is doubled. When labour and capital are doubled from 2 to 4 units, output also doubles from 50 units to 100 units. This is constant returns to scale.

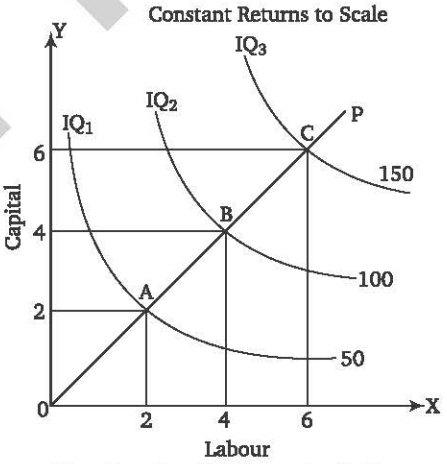


Fig : Constant Returns to Scale

Q.15. Discuss the diminishing returns to scale.

Ans. Diminishing Returns to Scale

Diminishing returns to scale refers to a situation in which output increases in lesser proportion than increase in factor inputs. For example, when capital and labour are doubled, but the output generated is less than double, the returns to scale would be termed as diminishing returns to scale. Figure given below shows the diminishing returns to scale:

As shown in the given figure, a movement from A to B shows that the amount of input is doubled. When labour and capital are doubled from 2 to 4 units, output increases less than double that is from 50 units to 80 units. This is diminishing returns to scale. Diminishing returns to scale is due to diseconomies of scale, which arises because of the managerial inefficiency.

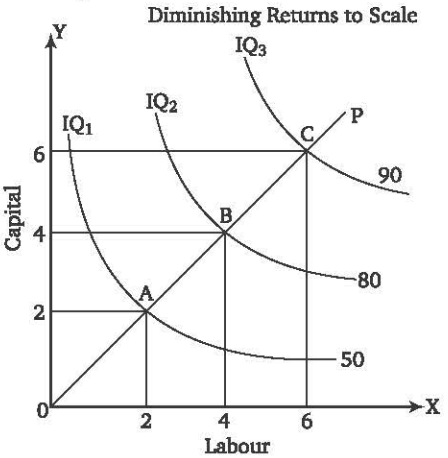


Fig : Diminishing Returns to Scale

Q.16. Differentiate between fixed cost and variable cost.

Ans. Difference between Fixed Cost and Variable Cost

Basis	Fixed Costs	Variable Costs
Variation	Fixed costs do not change with change in quantity of output.	Variable costs change with change in quantity of output.
Period Situation of Zero	It is long period concept. FIxed costs remain the same whether output is zero or maximum.	It is short period concept. Variable costs are zero when output is zero. These costs increase and decrease when output decreases.
Factors	It is related to the fixed factors.	It is related to the variable factors.
Continuance	A firm can continue production even if there is loss of fixed costs.	Production will be continued by a firm, only if its variable costs are obtained.
Examples	Examples are (a) rent, (b) wages of permanent staff, (c) licence fee, (d) cost of plant and machinery, etc.	Examples are (a) cost of raw material, (b) wages of casual labour, (c) expenses on electricity, etc.
Supplementary & Prime Costs	These are the supplementary costs.	These are called as prime costs.

Q.17. Why is the short-run average cost curve u-shaped?

Ans. In the short-run average cost, curves are U-shape. U-shape average cost curve implies that in the initial stages average cost curve falls and beyond a point it rises. It can be on account of the following reasons :

1. **Basis of Average Fixed Cost and Average Variable Cost :** As we know, Average Cost is the aggregate of average Fixed Cost and average Variable Cost, i.e.,

   $$AC = AFC + AVC$$

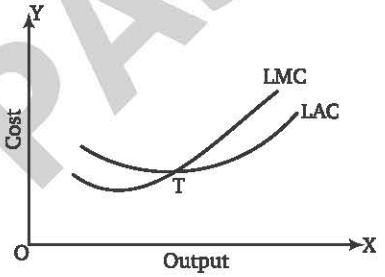
   With every increase in output initially the average fixed cost and average variable cost falls. But after a minimum point, average variable cost stops falling but not the average cost. It is due to this reason that average variable cost reaches the minimum before AC. The point, where AC is minimum is called the optimum point. After this point, AC begins to rise upward. The net result is the increase in AC. Therefore, it is only due to the nature of AFC and AVC that AC first falls, reaches minimum and afterwards starts rising upward and hence assumes the U-shape.
2. **Basis of the Law of Variable Proportion :** The U-shape of the short-run average cost curve can also be explained in terms of **the law of variable proportions.** This law tells that when the quantity of one variable factor is changed while keeping the quantities of other factors fixed, the total output increases but after some time it starts declining. For example, when the quantities of a variable factor like labour are increased in equal quantities, production rises till fixed factors like machines, building, etc., are used to their maximum capacity. In this stage, the AC of the firm continues to fall as output increases because it operates under the law of increasing returns due to various internal economies. After the capacity output is reached, average cost (AC) begins to rise because the variable inputs, become 'too much' for the plant of fixed size. Thus, the 'U'-shape of the short-run average cost curves is due to the non-proportional returns at a given scale of the plant.

Q.18. Explain the relation between long-run marginal cost and short-run marginal cost.

Ans. **Relation between LMC and SMC**

SMC refers to the effect on total cost due to the production of one more unit of output on account of change in variable factors. LMC refers to change in total cost due to production of one more or less unit of output due to change in all factors. We have already noted that in the long period all factors are variable. The long-run marginal cost is derived from short-run marginal costs, but does not envelope them. The long-run marginal cost (LMC) must be equal to SMC for the output at which the corresponding SAC is tangent to the LAC. Relation between LMC and LAC is also explained with the help of fig. The behaviour of the LMC curve is shown in fig. The LAC and LMC curves will behave in the same way as the SAC and SMC curves, *i.e.,*

1. So long as the LAC curve is falling the LMC curve will lie below the LAC curve.
2. So long as the LAC curve is rising, the LMC curve will be rising and will lie bove it.
3. The LMC curve will intersect the LAC from below and at its minimum point. This property follows (i) and (ii) above.



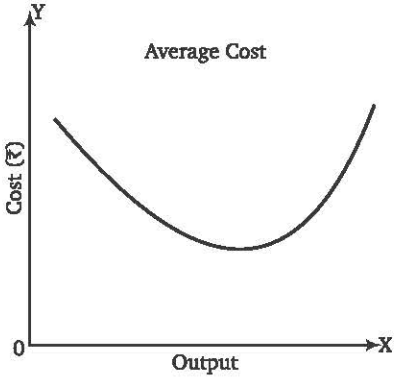
Usefulness of LAC curves : The usefulness of LAC curve lies in its ability to assist the firm in the determination of the best size of the plant to be adopted for producing the given output. For outputs less than the low-cost combination at the optimum scale, that is, when the firm is operating subject to increasing returns to scale it is more economical to underuse a slightly larger plant operating at less than its minimum cost output than to overuse a smaller plant. Conversely, at outputs beyond the optimum level, that is, when the firm experiences decreasing returns to scale, it is more economical to overuse a slightly smaller plant than to underuse a slightly larger.

Q.19. What do you mean by Average Cost (AC)?

Ans. **Average Cost**

According to **Dooley**, "The average cost of production is the total cost per unit of output." In other words, average cost of production is the total cost of production divided by the total number of units produced. Suppose, the total cost of producing 500 units is ₹ 1,000, the average cost will be :

$$\text{Average Cost (AC)} = \frac{\text{Total Cost (TC)}}{\text{Output (Q)}} = \frac{100}{500} = 2$$



Average cost is shown in the given figure. In this figure, output is measured on OX-axis and cost on OY-axis. AC curve represents average cost. It resembles English alphabet 'U'. It means that with increase in output initially average cost falls but after having reached its minimum, it begins to rise as the output increases.

In short period average cost is the total of average fixed cost and average variable cost, *i.e.* AC = AFC + AVC

Here AC = Average Cost; AFC = Average Fixed Cost; AVC = Average Variable Cost.

Q.20. Explain the concept of production in short-run.

Ans. **Concept of Production in Short-Run**

The short-run refers to a time period in which the supply of the inputs, such as plant and machinery is fixed. Only the variable inputs, such as labour and raw materials can be used to increase the production of the goods. In other words, in the short-run, change in production is brought by changing only one variable, while other factors remain constant.

The short-run production function is given as :

$$Q = f(L, \overline{K})$$

where L = labour, which is variable

$\overline{K}$ = Capital, which is constant

The law of production studied under short-run production is called the law of variable proportions or the law of diminishing marginal returns. For learning the law of production under short-run, it is necessary to study about total product, average product and marginal product.

1. **Total Product (TP) :** It can be defined as the total quantity of output produced by an organisation for a given quantity of input. It is also known as total physical product.
2. **Average Product (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. **Marginal Product (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

SECTION-C LONG ANSWER TYPE QUESTIONS

Q.1. Elaborate short-run traditional theory of cost.

Ans. **Short-Run Traditional Theory of Cost**

According to the traditional theory of the costs, the costs are divided into three types:

1. Total Cost, 2. Average Cost, 3. Marginal Cost

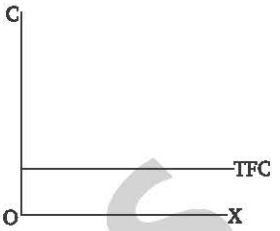
1. Total Cost

Total cost is the total expenditure incurred by a firm during the production process. Total cost will change with the change in the ratio of output to input. Such changes may be the result of the changes in the efficiency of conversion process or changes in the prices of inputs. Total cost is a positively sloped curve.

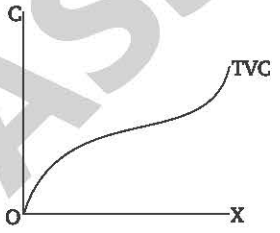
Total cost to a producer for the various levels of output is the sum of total fixed cost and total variable cost, *i.e.,*

TC = TFC + TVC.

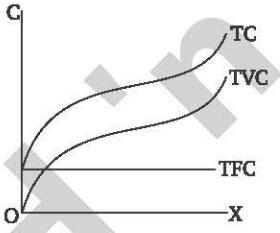
(i) **Total Fixed Cost :** Total fixed costs refer to those costs which are unable to vary. For example: land, buildings, machinery, etc. Even the output is zero fixed costs will be there. Because, this cannot be variable with respect to the level of production. So, it is also called invariable cost. Since fixed costs are fixed or rigid, it can be represented through a curve having horizontal shape to output axis. This can be shown with the help of diagram given aside :



(ii) **Total Variable Cost :** Variable cost is incurred on the employment of variable factors like raw materials, direct labour, power, fuel. transportation, sales commission, depreciation charges associated with wear and tear of assets, etc. It varies directly with output. The curve of variable cost can be shown as follows:



From the curves of fixed cost and variable costs, the total cost can be derived as follows :



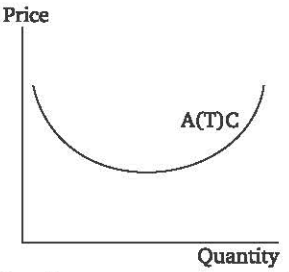
2. Average Cost

Average total cost is the sum of the average fixed cost and average variable cost. Alternatively, ATC is computed by dividing total cost by the number of units of output.

Therefore,

ATC or AC = AFC + AVC = TC/Q

Average cost is also known as unit cost, as it is cost per unit of output produced. It can be shown as follows:



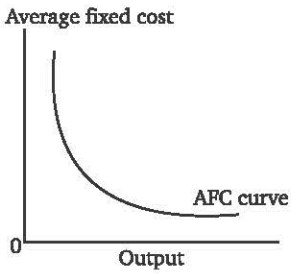
The short-run average total cost curve (SATC or SAC)

Average cost is inclusive of Average Fixed Cost and Average Variable Cost.

(i) **Average Fixed Cost :** AFC is the average of total fixed costs. AFC can be obtained by dividing the total fixed cost by total quantity of output each time produced. Mathematically,

AFC = TFC/quantity

TFC will be always fixed. So, AFC will reduce and never reaches zero. Its curve is given aside.



(ii) **Average Variable Cost :** AVC is the average of total variable cost. It can be found out by using the following formula.

AVC = TFC/quantity

AVC curve will be a 'U'-shaped which is showing that when the output raises, the cost will decline, but after a certain level the cost starts to increases. That is why due to the variable proportion.

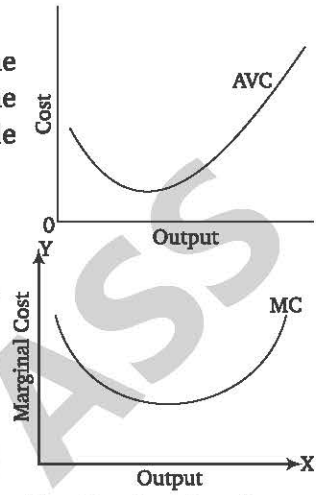


Fig : Marginal Cost Curve

3. Marginal Cost

It is the addition to total cost required to produce one additional unit of a commodity. It is measured by the change in total cost resulting from a unit increase in output. For example, if the total cost of producing 5 units of a commodity is ₹ 100 and that of 6 units is ₹ 110, then the marginal cost of producing 6th unit of Commodity is ₹ 110 – ₹ 100 = ₹ 10. The formula for marginal cost is $MC_n = TC_n - TC_{n-1}$

It means that marginal cost of 'n' units of output (MC_n) can be obtained by subtracting the total cost of production of 'n-1' units (TC_{n-1}) from the total cost of production of 'n' units (TC_n). Alternatively, marginal cost can be expressed as MC = $\Delta TC / \Delta Q$.

Here, ΔTC stands for change in total cost and ΔQ stands for change in total output.

This can be shown in the figure given above.

Q.2. Explain long-run traditional theory of cost.

Ans. **Long-Run Costs of Traditional Theory**

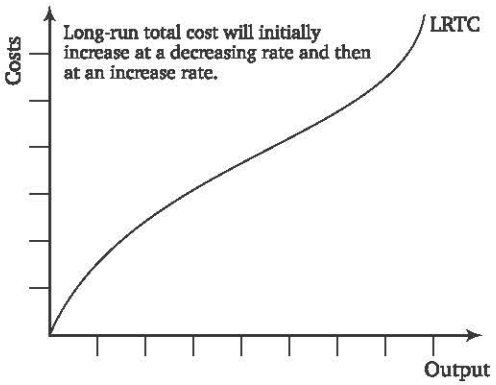
In the long-run, all factors are assumed to become variable. Long-run cost curve is a planning curve, in the sense that it is a guide to the entrepreneur in his decision to plan the future expansion of his output. The long-run average-cost curve is derived from short-run cost curves. The long-run costs are categorised as follows :

1. Long-run total cost
2. Long-run average cost
3. Long-run marginal cost

1. Long-Run Total Cost

Long-run Total Cost (LTC) refers to the minimum cost at which given level of output can be produced. According to **Leibhafasky**, "the long-run total cost of production is the least possible cost of producing any given level of output when all inputs are variable." LTC reresents the least cost of different uantities of output. LTC is always less than or equal to short-run total cost, but it is never more than short-run cost.

This can be shown as aside.

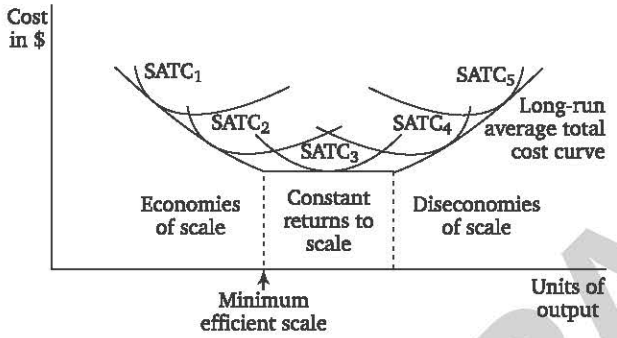


Long-run total cost curve

2. Long-Run Average Cost

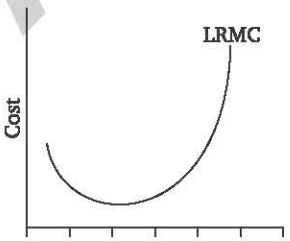
Long-run Average Cost (LAC) is equal to long-run total costs divided by the level of output. The derivation of long-run average costs is done from the short-run average cost curves. In the

short-run, plant is fixed and each short-run curve corresponds to a particular plant. The long-run average costs is also called planing curve or envelope curve as it helps in making organizational plants for expanding production and achieving minimum cost.



3. Long-Run Marginal Cost

Long-run Marginal Cost (LMC) is defined as added cost of producing an additional unit of a commodity when all inputs are variable. This cost is derived from short-run marginal cost. On the graph, the LMC is derived from the points of tangency between LAC and SAC.



Q.3. Elaborate the long-run production function.

Ans.

Long-Run Production Functions

Long-run is the period in which the supply of labour and capital is elastic. It implies that labour and capital are variable inputs. The long-run production function can be expressed as :

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

where L = labour, which is variable

K = capital, which is variable

In the long-run, input-output relations are studied by the laws of returns to scale. These are long-run laws of production. The laws of returns to scale functional can be explained with the help of the isoquant curve, which is discussed below :

Isoquant Curves

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.

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

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."

Assumptions of an Isoquent Curve

The assumptions of an isoquant curve are as follows :

1. There are only two factor inputs, labour and capital, to produce a particular product.
2. Capital, labour and goods are divisible in nature.

3. Capital and labour are able to substitute each other up to a certain limit.
4. Technology of production is given over a period of time.
5. Factors of production are used with full efficiency.

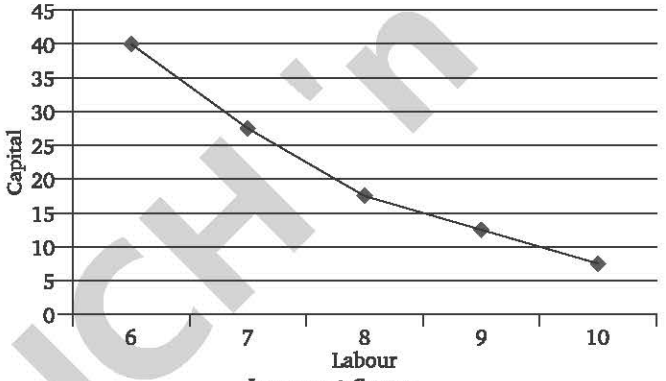
Let us learn isoquant with the help of the following table :

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

Table : Combinations of Two Factor Inputs

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

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

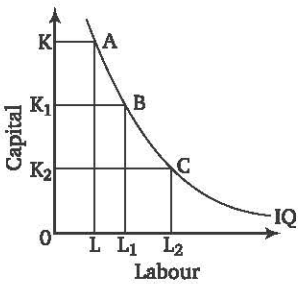


Isoquant Curve

Properties of the Isoquent Curves

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

1. **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.
2. **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. Figure shows the convex isoquant curve:

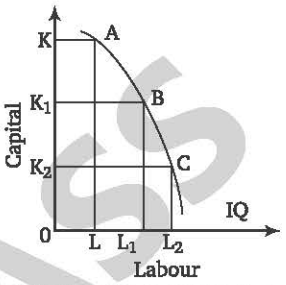


Convex Isoquant Curve

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.The following figure shows the concave 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.



Concave Isoquant Curve

3. **Isoquant curves cannot intersect each other :** An isoquant implies the different levels of combination producing different levels of inputs. 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.
4. **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.

Q.4. What do you mean by production function? Explain in detail.

Ans .

Production Function

The functional relationship between input and output is known as production function. The production function states the maximum quantity of output which can be produced from any selected combination of inputs. In other words, it states the minimum quantities of input that are necessary to produce a given quantity of output. The production function can be expressed in form of an equation in which the output is the dependent variable and inputs are the independent variables. The equation is expressed as follows :

Average Product or Average Physical Product (APP) : is the total physical product (TPP) divided by the quantity of input.

$$APP_L = TPP / L$$
$$APP_K = TPP / K$$

Marginal Product or Marginal Physical Product (MPP) : It is the increase in total output that results from a one unit increase in the input, keeping all other inputs constant.

$$MPP_L = \Delta TPP / \Delta L$$

or

$$MPP_L = \Delta TPP_n - TPP_{n-1}$$

In the above table, the total product initially increases at an increasing rate till the employment of the 4th unit of labour. Beyond, the marginal product started diminishing. The marginal product declines faster than the average product. At the 6th unit, the total product is at its maximum. For 7th unit, marginal product is zero and the marginal product of 8th unit is negative. Thus, when more and more units labour are combined with other fixed factors, the total product increases first at an increasing rate, and then at a diminishing rate and finally it declines in absolute terms.

All the three stages taken together describe the Law of Variable Proportions.

Stage I : Total product first increases at an increasing rate and then at a decreasing rate and this continues till the end of this stage. Average product is continuously increasing. MP first

increases, becomes maximum and then starts falling. The stage I ends where average product reaches its highest point, so here, the efficiency of variable factor (labour) is maximum. There are two important reasons for increasing returns:

1. indivisibility
2. specialization

Stage II : Total product continues to increase at a diminishing rate until it reaches its maximum point at the end of this stage. Both AP and MP diminish, but are positive. At the end of the second stage, MP becomes zero. TP is maximum when MP is zero. AP shows a steady decline throughout this stage. As both AP and MP decline, this stage is known as stage of diminishing returns. The main cause of the application of the law of diminishing returns is the scarcity of one or the other factor of production. In other words, the elasticity of substitution between the factor is not infinite.

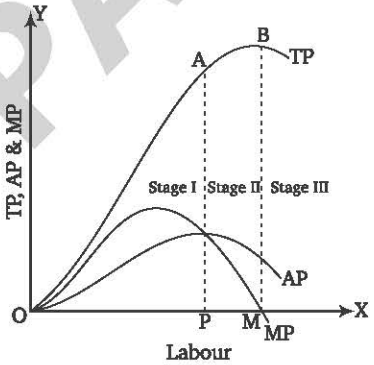
Stage III : In this stage, TP starts to decline. AP shows a steady decline, but never becomes zero. MP becomes negative. The phenomenon of negative returns emerges as a result of application of excessive units of variable factor in relation to fixed factor, so they get in each other's way, with the result that TP starts diminishing.

In the given figure , X-axis shows labour levels and Y-axis shows TP, AP, and MP.

Stage I is till point A on TP curve where MP= AP.

Stage II is till point B on TP curve where TP reaches its maximum, AP steadily falls and MP=0.

Stage III is beyond point B on TP curve where TP begins to fall and MP becomes negative.



Law of Variable Proportions

Q.5. Elaborate the internal economies of scale.

Ans.

Internal Economies of Scale

Internal economies of scale are associated with the expansion of the scale of output of the firm; they are derived indirectly as a result of expansion of the industry to which it belongs. Listed below are some of the leading sources of such economies.

Managerial Economies : These economies arise on account of the scope of employing better qualified and trained managers and other employees who are able to take quicker and more profitable decisions. In addition, management experts are exploring new methods of improving the management of the firm and reducing its cost of operations.

Financial Economies : It is a common knowledge that most firms have to depend upon borrowed funds. The lenders, while deciding the rate of interest to be charged on their loans, give due importance to the 'creditworthiness' of the borrower. And other things being equal, bigger firms enjoy greater creditworthiness than the smaller one. Accordingly, they are able to borrow funds at lower interest rates. For the same reason, they have also the option of raising additional sources through equity capital.

Technical Economies : With an increase in the scale of output, the choice of inputs and their varieties becomes wider for the firm. It can go in for those machines and equipments, etc. which have a higher marginal productivity as compared with their cost. In other words, it is possible to get a larger output per unit of cost incurred on them.

Bye-Products : An increase in the scale of output also generates bigger flows of wastes. When the scale is small, the firm is not able to use these products for additional earnings. However, when the generation of waste crosses a critical limit, it often becomes possible for the firm to produce certain bye-products or sell off the waste to other firms and thus add to its income.

Better Utilization of Inputs : Various inputs, particularly machines and equipments are lumpy and indivisible. They also require time intervals for 'maintenance' and 'servicing', etc. Any one of them can go out of order and require repairs. If a machine goes out of order, or is otherwise not able to operate, then a firm with a small scale is not able to find its substitute and its production suffers. For example, if a transport company has only one truck and that needs some repair, its employees are left unemployed for the time being, though the firm has to pay them all the while. In contrast, a firm with a bigger scale is able to adjust the availability of its machinery, equipment and employees, etc. in such a manner that the 'downtime' of various inputs is adequately taken care of.

Economies of Inventories : A bigger-size firm is in a better position to adjust its stocks of inputs and finished products etc. in such a manner that the normal discrepancy between flows of production and sales are ironed out.

Marketing Economies : A large firm also reaps the advantages of buying and selling in bulk. As a result, it is able to procure its inputs at concessional prices. Similarly, on account of bulk selling, its average selling costs come down. It can also have separate sales and marketing departments which can undertake the job of marketing its product in a professional manner. In addition, its sheer size imparts it better bargaining strength.

Advertising : When a firm is not operating under conditions of perfect competition, it is obliged to undertake various activities to promote its sales of which advertising happens to be an integral part. It is found that a small firm is not able to afford advertising because it has to be repetitive to be successful. Moreover, with an increase in the advertising budget, a firm is able to diversify its programme so as to cover more effective media and in an optimum proportion. As a result, its per unit advertising expenses come down.

Risk Economies : A large firm can diversify its product lines and thereby reduce the average risk faced by it since all product lines are not likely to generate losses simultaneously. The firm can compensate its losses from some lines with profits from the others. A large firm has also better command over resources compared with a small firm.

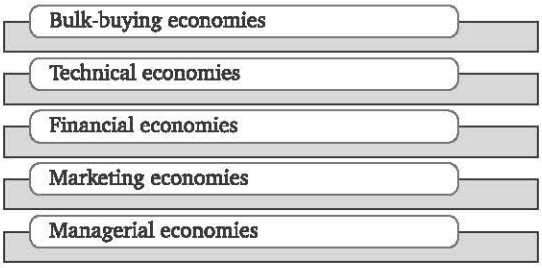
Q.6. Explain in detail economies and diseconomies of scale.

Ans.

Economies of Scale

As a firm expands its production capacity, the efficiency of production also increases. It is able to draw more output per unit of input, leading to low average total costs. This condition is termed as **economies of scale**. Economies of scale result in cost saving for a firm as the same level of inputs yield a higher level of output. Higher level of output results in lower average costs as the total costs are shared over the increased output. There are two types of economies of scale :

1. **Internal economies of scale**: These refer to the economies that a firm achieves due to the growth of the firm itself. When an organisation reduces costs and increases the production, internal economies of scale are achieved. Internal economies of scale refer to the lower per unit cost that a firm obtains by increasing its capacity. There are five types of internal economies of scale, as shown in the given figure.



Types of Internal Economies of Scale.

Let us discuss the different types of internal economies of scale in detail :

(i) **Bulk-buying economies :** As a firm grows in size, it requires larger quantities of production inputs, such as raw materials. With increase in the order size, the firm attains bargaining power over the suppliers. It is able to purchase inputs at a discount, which results in lower average cost of production.

(ii) **Technical economies :** As a firm increases its scale of production, it may use advanced machinery or better techniques for the production purposes. For example, the firm may use mass production techniques, which provide a more efficient form of production. Similarly, a bigger firm may invest in research and development to increase the efficiency of production.

(iii) **Financial economies :** Often small businesses are perceived as being riskier than larger businesses that develop a credible track record. Therefore, while the smaller firms find it hard to obtain finance at reasonable interest rates, larger firms easily find potential lenders to raise money at lower interest rates. This capital is further used to expand the production scale resulting in low average total costs.

(iv) **Marketing economies :** The marketing function of a firm incurs a certain cost, such as costs involved in advertising and promotion, hiring sales agents, etc. Many of these costs are fixed and as the firm expands its capacity, it is able to spread the marketing costs over a wider range of products. This results in low-average total costs.

(v) **Managerial economies :** As a firm grows, managerial activities become more specialised. For example, a larger firm can further divide its management into smaller departments that specialise in specific areas of business. Specialist managers are likely to be more efficient as they possess a high level of expertise, experience and qualifications. This reduces the managerial costs in proportion to the scale of production in the firm. Therefore, economies of scale can be achieved with efficient management.

2. **External economies of scale :** The other category of economies of scale is the external economies of scale. These refer to the economies in production that a firm achieves due to the growth of the overall industry in which the firm operates. External economies of scale transpire outside a firm, within an industry. Therefore, when an industry's scope of operations expands, external economies of scale are said to have been achieved. For example, the creation of a better transportation network, which results in a subsequent fall in the transportation cost of a firm operating within that industry, leads to external economies of scale. Some of the main factors that lead to external economies of scale are as follows :

(i) Improvement in transport and communication network
(ii) Focus on training and education within the industry
(iii) Support of other industries

Diseconomies of Scale

On the other hand, **diseconomies of scale** refer to the disadvantages that arise due to the expansion of a firm's capacity leading to a rise in the average cost of production. Similar to the economies of scale, diseconomies of scale can also be categorised into internal and external diseconomies of scale. Let us discuss the internal and external diseconomies of scale in detail :

1. **Internal diseconomies :** These refer to the diseconomies that a firm incurs due to the growth of the firm itself. These diseconomies of scale result in a decrease in the firm's output and increase in the long-run average cost. The two main reasons for internal diseconomies of scale are as follows:
   (i) **Managerial inefficiency :** When a firm expands its production capacity, control and planning also need to be increased. This requires the administration to be more efficient. Often due to the challenge of managing a bigger firm, managerial responsibilities are delegated to the lower level personnel. As these personnel may lack the required experience to undertake the challenge, it may result in low output at higher cost.
   (ii) **Labour inefficiency :** When a firm expands its production capacity, work areas may become more crowded leaving little space for each worker to work efficiently. Moreover over-specialisation and division of labour in a bigger firm create over-dependence on workers. In such situations, labour absenteeism, lethargy, discontinuation of services, etc., become common, which increase the long-run average cost of production.
2. **External diseconomies :** External diseconomies of scale refer to the disadvantages that arise due to an increase in the number of firms in an industry leading to over production. Several factors that give rise to external diseconomies of scale are as follows:
   (i) The concentration of firms within an industry increases the demand for raw materials. This leads to an increase in the prices of raw materials, consequently increasing the cost of production in the industry.
   (ii) The concentration of firms within an industry increases the demand for skilled labour. This leads to an increase in the wages of the skilled workers, consequently increasing the cost of production in the industry.
   (iii) The concentration of firms within an industry may lead to problems of waste disposal. Firms are bound to employ expensive waste disposal or recycling methods, which increases the long-run cost of production.
   (iv) The concentration of firms within an industry may lead to excessive need for advertising and promotion, consequently increasing the cost of production in the industry.

Q.7. Elaborate the optimum factor combination. Also discuss the economic region of production and ridge lines.

Ans.

Optimum Factor Combination

An important problem facing an entrepreneur is to decide about a particular combination of factors which should be employed for producing a product. There are various technical

possibilities open to a firm from which it has to choose, that is, there are various combinations of factors which can yield a given level of output and from among which a producer has to select one for production.

An isoquant or iso-product map represents various technical possibilities of producing different levels of output. It is assumed that the entrepreneur aims at maximising his profits. A profit maximising entrepreneur will seek to minimise his cost for producing a given output, or to put it in another way, he will maximise his output for a given level of outlay.

The Choice of a praticular combination of factors by an entrepreneur depends upon:

(a) Technical possibilities of production, and

(b) The prices of factors used for the production of a particular product.

Technical possibilities of production are represented by the isoquant map. Before explaining how a producer will arrive at the optimum or least-cost combination of factors, we shall first explain how the price of factors can be introduced into the study.

The Economic Region of Production and Ridge Lines : Before explaining which factor combination a firm will use for production, it will be useful to demonstrate the region in which the optimal factor combination will lie. The traditional economic theory focuses on only those combinations of factors which are technically efficient and the marginal products of factors are diminishing but positive.

According to this isoquants are sloping downward (*i.e.* their slope is negative) and convex to the origin, however, there are regions in a production function, where isoquants may have positively sloped segments that is, bend backwards. In fig. we represent a production function through isoquants and measure labour along the X- axis and capital along the Y-axis.

It will be seen from this figure that above the line OA and below the line OB slope of the isoquants is positive which means that increases in both capital and labour are required to produce a given fixed quantity of output. Obviously, the production techniques (that is, factor combinations) lying on these positively sloping segments of the isoquants are technically inefficient.

It may be recalled that a technique or factor combination is technically inefficient if it requires more quantity of both the factors for producing a given level of output. The positively sloping segments of isoquants implies that marginal product of one of the factors has become negative.

Advertisements : Thus, above the line OA, marginal product of capital has become negative, which means output can be increased by using less capital, while the amount of labour is held constant. On the other hand, below the line OB, marginal product of labour becomes negative, which means output can be increased by using less labour, keeping capital constant.

The lines OA and OB are called the ridge lines which bound a region in which marginal products of the two factors are positive. The ridge line OA connects those points of the isoquants where marginal product of capital is zero ($MP_L = o$). On the other hand, the ridge line OB connects those points of the isoquants where marginal product of labour is zero ($MP_L = 0$). Thus, the ridge lines are the locus of points of isoquants where marginal product of one of the factors is zero.

No rational entrepreneur will operate at a point outside the ridge lines since marginal product of one of the factors is negative and production is technically inefficient. In other words, production outside the ridge lines is inefficient, because same output can be produced

with less quantity of the factors which must be cheaper. This can be better understood from the given figure.

Consider point 'R' isoquant Q_2, R is the point where the isoquant is positively sloping and therefore lies outside the ridge line. It will be seen from the given fig. that production at point R to produce output Q_2 requires more of both capital and labour than some other points, such as point H, on the same isoquant. Since, both capital and labour have to paid positive prices; it will be cheaper to produce a given quantity of output at point H than at point R.

Thus, since production outside the ridge lines are technically inefficient and marginal product of one or the other factor is negative, no rational entrepreneur will like to operate outside the ridge lines if he aims at minimising cost to produce a given output. Thus, regions outside the ridge lines are called regions of economic nonsense.

A rational producer will produce in the region bounded by the two ridge lines OA and OB where the isoquants are negatively sloping, marginal products of factors are diminishing but positive. Therefore, the region bounded by the two ridge lines, OA and OB is called the region of economic production which has been shaded by us.

Exactly at what point in the economic region, a firm will operate depends on the outlay it has to make on purchasing the factors and also on prices of the factors. In what follows we now turn to explain this choice by a firm. We will first explain the concept of iso- cost line which is used in the study of optimum factor combination.

The above analysis also shows that there is a limit to which one factor can be substituted for another. As the substitution of one factor for another is carried out more and more, it becomes progressively more difficult unit a point is reached beyond which substitution between factors becomes impossible. As a result, the marginal product of the increasing factor first becomes zero and then it becomes negative so that isoquant becomes positively sloping.

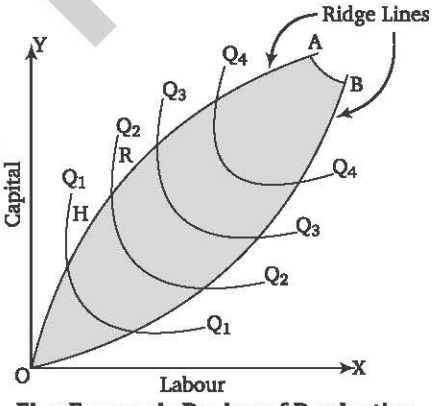


Fig : Economic Region of Production

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UNIT-III

Market Structure and Pricing

SECTION-A VERY SHORT ANSWER TYPE QUESTIONS

Q.1. What do you mean by the term 'market'?

Ans. Market means a particular place where goods are sold and bought. These transactions are done by several sellers and buyers. In economics, the term market has been used in wider sense. Thus market is not only related to any particular area but refers to whole area in which the buyers and sellers contact with each other and finalise the transactions of commodities. In short, a market is a set of conditions in which buyers and sellers meet each other for the purpose of exchange the goods and services for money.

Q.2. Classify 'market' on the basis of competition.

Ans. On the basis of competition market can be classified as follows :

1. Perfect Competition
2. Imperfect Competition : It is classified as follows :
   (i) Monopolistic Competition
   (ii) Duopoly and oligopoly
3. Monopoly

Q.3. What is meant by perfect competition?

Ans. The term market structure refers to the degree of competition prevailing in that particluar market.

According to **Marshall**, "The more nearly perfect a market is, the stronger is the tendency for the same price to be paid for the same thing at the same time in all parts of the market."

As per **Benham,** "A market is said to be perfect when all the potential sellers and buyers are promptly aware of the price at which transactions take place and all of the offers made by other sellers and buyers and when any buyer can purchase from any seller and vice-versa."

Thus, perfect competition is a market situation where a colossal amount of buyers as well as sellers possessing complete knowledge of the market come together to afford the similar products. In perfect competition, the demand curve is perfectly elastic.

Q.4. What do you mean by monopolistic competition?

Ans. Perfect competition and monopoly are rarely found in the real world. Therefore, professor **Edward H. Chamberlin** of Harvard University brought about a synthesis of the two theories and put forth "Theory of Monopolistic Competition" in 1933. Monopolistic competition is more realistic than either pure competition or monopoly. It is a blending of competition and monopoly.

"There is competition which is keen though not perfect, between many firms making very similar products." Thus monopolistic competition refers to competition among a large number of sellers producing close but not perfect substitutes.

Example : Firms producing variety of toothpastes, such as, Forhans, Colgate, Cibaca, etc. are examples of monopolistic competition.

According to **JS Bains,** "Monopolistic competition is market structure where there is a large number of small sellers, selling differentiated but close substitute products."— J. S. Bains

Q.5. Define the term 'Oligopoly'?

Ans. "Oligopoly may be defined as, market situation in which there are a small number of sellers and the activities of every seller are important for others."

Oligopoly is a market where a small group of producers, have significant control over major portion of the market demand, with or without differentiated product.

Oligopoly is market situation in between monopoly and perfect competition in which the number of sellers is more than one but is not so large that the market price is not influenced by any one of them.

According to **Prof. George J. Stigler,** "Oligopoly is market situation in which a firm determines its marketing policies on the basis of expected behaviour of close competitors."

Q.6. What is meant by perishable commodities?

Ans. Perishable commodities are those commodities which lose their quality and importance in a longer period. These commodities can be stated as green vegetables, butter, cheese, milk, meat, etc. These are sold in the market on the same day of supply. In very short period, supply curve of these commodities is perfectly inelastic and their price is determined only by their demand. When the demand of these commodities increases, their prices also increase.

Q.7. What is meant by normal price?

Ans. Normal price is the price which is determined in long period with the action of long period demand and supply. In its determination, supply also plays an important role with demand because supply can easily be adjusted according to demand. Normal price is a permanent price. It does not change frequently. Because it is affected by general factors and these factors do not change so often. Normal price is influenced by the cost of production i.e., prime cost and supplementary cost.

Q.8. What do you mean by short period price?

Ans. Short period price relates to a few months during which the size of the firm and its plant cannot be altered. The stock of a commodity can be increased during the short period by more intensive use of the existing plant. This can be achieved by starting two or three shifts and also by employing more labour, raw material, etc. However, the scale of production cannot be changed by increasing the fixed plant and organisation. The price that prevails in the short period is called short price or sub-normal price.

Q.9. What is meant by monopoly?

Ans. 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 this product. Monopoly is that market form in which a single producer controls the entire supply of a single commodity which has no close substitutes. There must be only one seller or producer. The commodity produced by the producer must have no close substitutes. Monopoly can exist only when there are strong barriers to entry. The barriers which prevent the entry may be economic, institutional or artificial in nature for instance Indian Railways and State Electricity Board.

Q.10. What is meant by non-perishable commodities?

Ans. Non- perishable commodities are those commodities which can be kep by the seller in stock for a long period. Their examples are cloth, food-grains, sugar, pulses, gram, etc. The supply curve of these commodities is not perfectly inelastic in very short period but the supply of these commodities can be changed though its change is only restricted to the present level of stock. It means the supply of these commodities cannot be increased beyond the level of stock of these commodities during the short period. Though, the demand plays a major role in determining the price of these commodities but the role of supply cannot be neglected in the determination of price.

Q.11. Explain the Kinked Demand Curve.

Ans. The Kinked Demand Curve was used by **Hall and Hitch** to explain why the price fixed by their average cost pricing principle, remain sticky or rigid. But kinked demand curve as a tool for the determination of the equilibrium in oligopolistic market was first used by **Paul Sweezy** in 1934.

The Kinked Demand Curve, analysis does not deal with price and output determination. Rather, it seeks to establish that once a price-quantity combination has been determined, an oligopoly firm will not find it profitable to change its price even when the cost and demand conditions change. It refers to a state of price rigidity.

SECTION-B SHORT ANSWER TYPE QUESTIONS

Q.1. Give various definitions of the term 'market'.

Ans.

Definitions of Market

Following are the important definitions of market :

1. "Market means the general field within which the forces determining the price of particular product operate." —Ely
2. "Market is any area over which buyers and sellers are in close touch with one another, either directly or through dealers that the price obtainable in one part of the market affects the prices paid in other parts." —Benham
3. "Economists understand by the term market not a particular place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such a free intercourse with one another that the price of the same goods tends to equality, easily and quickly." —Cournot
4. "The term refers not necessarily to a place but always to a commodity or commodities and the buyers and the sellers of the same who are in direct competition with one another." —Chapman
5. "A market is that mechanism by which buyers and sellers brought together. It is not necessarily a fixed place." —J. L. Edwards

Q.2. What are the essentials of a market?

Ans.

Essentials of A Market

The only essential for a market is that all buyers and sellers should be in constant touch with each other, either because they are in the same building or because they are able to talk to each other by telephone at a moment's notice. Thus, a market has the following basic components :

1. There should be buyers of the product. If a country consists of people who are very poor, there can hardly be market for luxuries like cars, VCR, etc.

2. A commodity should be offered for sale in the market. Otherwise there is no question of buying the commodity. Therefore, existence of sellers is a necessity for any market.
3. Buyers and sellers should have close contact with each other.
4. There should be a price for the commodity. The exchange of commodities between buyers and sellers occurs at a particular price which is mutually acceptable to both the buyers and sellers.

Q.3. What do you mean by market structure? What are the factors affecting the marketing structure?

Ans.

Market Structure

Market structure and its conditions determine the price of a product and quantity of its production. Market structure refers to the specific form of market in which any commodity is produced, bought or sold or any service is proposed and rendered.

In the words of **Pappas** and **Hirschey**, "Market structure refers to the number and size distribution of buyers and sellers in the market for goods or services."

Factors Affecting the Market Structure

Market structure of a product is affected by various factors. These factors are as follows :

1. **Number of Firms :** Market structure mainly depends upon the number of the firms producing the commodity. Number of producers or manufacturers have no importance in this respect.
2. **Type of Commodity :** Market structure is based on the different types of product produced by different firms. Whether all the firms are producing similar products or different products.
3. **Entry of New Firms :** Market structure is determined with the entry of new firms in the industry. If the entry of new firm is restricted, then situation of monopoly exists. On the other hand, if the entry of new firms is free then situation of perfect competition prevails.

Q.4. 'Monopoly is the extreme case of imperfect competition'. Do you agree? Discuss.

Ans. Yes, I am agree that monopoly is the extreme case of the imperfect market . It is a market under the imperfect market structure. It is often criticized by many as a source of inefficiency and exploitation. Yet its existence poses a challenge to many businesses as well as individuals. In tatting business decisions managers always attempt to appreciate the market condition in which their competitors are operating. In this unit, issues relating to the monopoly as a form of market will be considered. Such issue shall include the meaning, reason for their existence, and their pricing condition.

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 this product. Monopoly is that market form in which a single producer controls the entire supply of a single commodity which has no close substitutes. There must be only one seller or producer. The commodity produced by the producer must have no close substitutes. Monopoly can exist only when there are strong barriers to entry. The barriers which prevent the entry may be economic, institutional or artificial in nature, for instance, Indian Railways and State Electricity Board.

"Broadly, the term Monopoly is used to cover any effective price control, whether of supply or demand of services or goods, narrowly it is used to mean a combination of manufacturers or merchants to control the supply price of commodities or services." —**Prof. Thomas**

Q.5. Differentiate between market price and normal price.

Ans.

Difference between Market Price and Normal Price

Basis	Market Price	Normal Price
Period	Market price is determined in very short period.	Normal price is determined in the long period.
Points of Time	Market price prevails at particular time or day.	Normal price is not determined so.
Effect of Demand and Supply	Demand plays a dominant role in the determination of price because supply cannot be adjusted according to the demand in the short period.	Supply plays a dominant role in determination of price because supply can be adjusted according to the demand over a long period.
Stability of Price	Price goes on changing from time to time.	Normal price is more stable than the market price.
Forces of Demand and Supply	Price is determined by the interaction of the temporary forces of demand and supply.	Price is determined by the interaction of permanent forces of demand and supply.
Theoretical and Practical	The concept of market price is real and practical	It is an imaginary and theoretical concept.
Cost of Production	Market price may be equal to, lesser or more than the cost of production.	The tendency of normal price is to equalise with the cost of production.

Q.6. Explain the various features of the market.

Ans.

Main Features of the Market

Following are the main features of a market :

1. **Commodity :** The market must have a commodity. Each commodity should have a separate market.
2. **Buyers and Sellers :** There must be buyers and sellers of the commodity in the market, because without them sale-purchase activity cannot be conducted.
3. **Area :** There should be an area in which buyers and sellers of the commodity live in. It is not essential that the buyers and sellers should come to a particular place to transact the business.
4. **Close-Contact :** There should be close contact and communication between buyers and sellers.
5. **Competition :** There should be some competition among buyers and sellers of the commodity in market. In this way, the term market includes the entire area where buyers and sellers contact each other to purchase and sell commodities at certain price.

Q.7. Classify market on the basis of area and time.

Ans.

Classification of the Market

1. **On the Basis of Area :** The market for any product may be classified on the basis of its size; it may be local, national or international market.
   (i) **Local Market :** If the commodity is sold within a small or local area only, it is said to have Local Market.

(ii) **National Market :** A National market is said to exist when a commodity is demanded and supplied all over the country. The market for wheat or cotton or sugar in this sense is national market.

(iii) **International Market :** When commodities are sold all over the world, they are said to have international market.

2. **On the Basis of Time :** On the basis of time, a market may be classified into three types as :

(i) **Market Period :** The Price that prevails in the market period, is called market price. In this market, time is too short for times to increase supply.

(ii) **Short Period :** The Price which prevails in the short run, is called short run price. Here production can be increased only by the effective utilization of resources.

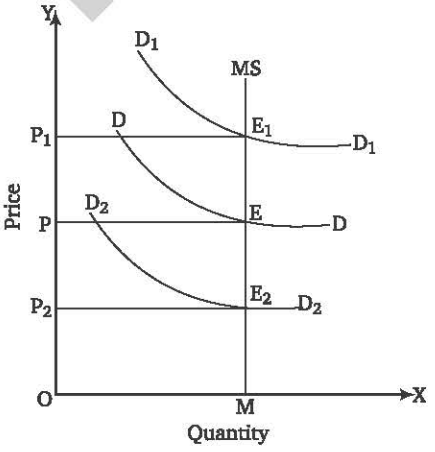
(iii) **Long Period :** The Long Period market is one in which demand and supply conditions have plenty of time to adjust themselves.

Thus, the market for a product may be classified into different types, on the basis of the time involved in adjusting demand and supply.

Q.8. What are the reproducible goods?

Ans. **Reproducible Goods**

These goods can be produced according to the requirement of the time. Reproducible goods are of two kinds: 1. Perishable goods and 2. Non-perishable goods.



1. **Perishable goods :** Figure given aside, illustrates market price of perishable commodity like vegetable, milk, etc. OM is the initial stock of the commodity. MS is the market period. Supply curve of fish which shows the fixed supply of fish in the market period. DD is the initial demand curve which intersects the supply curve at point E. OP (EM) in the equilibrium market price. If the demand increases from DD to D_1D_1 the new equilibrium is established at Et_1 - and price rises to OP_1, the supply remains fixed at OM. On the contrary, if the demand falls from DD to D_2 D_2 the market price will fall from OP to OP_2, the supply remaining constant at OM. We, thus, see that changes in the demand leads to price changes ; at times abrupt, in the market period. All the while supply remains fixed during this period.

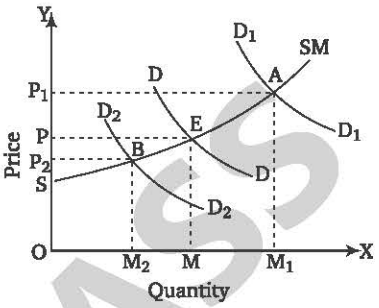
2. **Non-perishable goods :** Most commodities are durable which can be kept in stock. When the price of a durable commodity increases with increase in the demand; its supply can be increased out of the given stock. Such commodities are potato, onion, wheat, tea, etc. They have two price levels. First, there is a minimum price level below which the seller will not sell his commodity instead he will hold back the whole stock of it. It is known as the reserve price. The other is a high price level at which the seller will be prepared to sell the whole stock of his goods.

Q.9. What are the factors that should be considered while fixing reserve price?

Ans. The following factors are taken into account while fixing the reserve price.

1. **Future price :** The reserve price depends on the likely changes in price in future. If price is expected to go up, the reserve price will be high and *vice versa.*

2. **Durability of the commodity :** The greater the durability of the commodity, the reserve price will be higher.
3. **Demand in future :** If the prospects of increased demand are high, then the seller will fix a high reserve price.
4. **Cost of storage :** The reserve price depends on the expenses to be incurred in holding back the stock. The longer the period and higher the storage cost, the lower will be the reserve, price and *vice versa.*
5. **Future cost of production :** If the seller expects production cost of the commodity to rise in future, he will be inclined to fix a higher reserve price and *vice versa*.



6. **Liquidity preference :** If the seller wants immediate liquid cash, he will sell at a lower price and the reserve price of the commodity will be less and *vice versa*.

Thus, there being two price levels the reserve price at which the seller will hold back the whole stock and the other, is the maximum price at which he would be prepared to sell the entire quantity. As the price offered rises, the amount supplied in the market goes on rising till the whole stock held by sellers comes out as supply to match the increase in demand. This also explains the vertical curve for a durable commodity in the above given figure.

Q.10. Discuss the classification of monopoly.

Ans.

Classification of Monopoly

Monopoly can be classified into following types :

1. **Pure and imperfect monopoly :** In pure monopoly, a firm has complete control over the supply and market. The cross-elasticity of demand with every other product is zero. According to **Triffin**, "Pure monopoly is that where the cross-elasticity of demand of the monopolists' product is zero." He has no fear of the entry of rivals. Under imperfect or simple monopoly the producer has to face competition from potential rivals. The cross-elasticity of demand for the product of a simple monopolist is low but not zero. In other words, a simple monopoly is an imperfect one. It is a strong monopoly but not perfect.
2. **General monopoly versus discriminating monopoly :** Under general monopoly, the monopolist does not differentiate between two buyers in changing price. He fixes a uniform price for all buyers. Discriminating monopolist on the other hand differentiate between two buyers. He fixes different prices for the same product for different consumers.
3. **Private and Public monopoly :** Private monopoly exists when the ownership of the firm, producing a monopolistic commodity is in the hands of an individual entrepreneur or an organisation. The sole aim of a private monopolist is to maximise the net monopoly profit. On the other hand, the ownership of public monopoly lies with the government or public corporation.

Q.11. Explain the various features of monopoly.

Ans.

Features of Monopoly

The main features of monopoly are as follows :

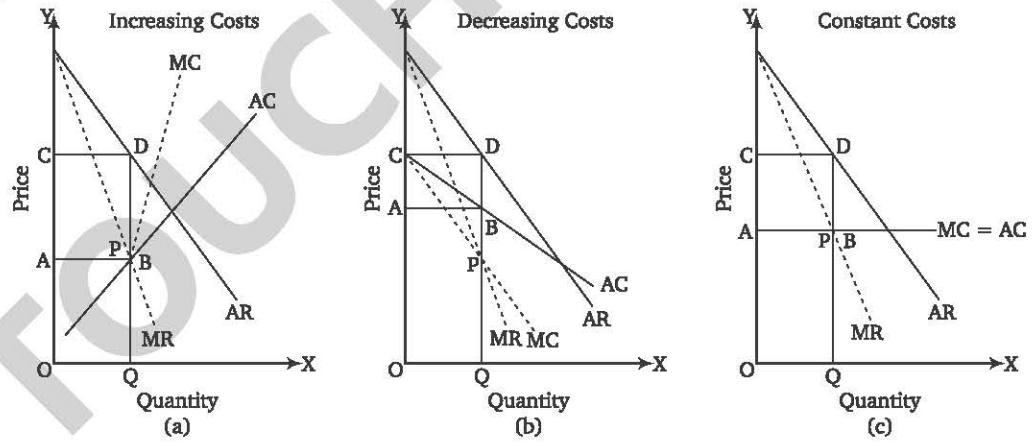
1. **Single Seller :** Under monopoly there should be a single producer of the commodity.

2. **Monopoly is also an Industry :** There being only one firm, the distinction between firm and industry no longer exists. Monopoly firm is also an industry.
3. **Substitute of the Commodity :** All the units of a commodity are identical and there are no close substitutes of that commodity.
4. **No entry of new firms :** There is restriction on other firms to enter the market.
5. **Prices Control :** Another distinct feature of monopoly firm is that it enjoys freedom and independence in fixing the price of the commodity or the output, it can fix either the price or output but not both.
6. **Different Average and Marginal Revenue Curves :** Under monopoly average revenue or Demand curve and Marginal revenue curve are separate and downward sloping.
7. **Selling Costs are very Small or Marginal :** This is so because if a buyer has to buy that product, he has to buy it from the monopoly firm only. Therefore, there is no competition and hence, no need of incurring selling costs, *i.e.,* costs on advertisements, etc.
8. **The demand curve :** The demand curve facing a monopolist slopes downward. This means if he sets a lower price of his product, he can sell more. On the other hand, if he sets a higher price of his product, he will be able to sell less quantity of his product.

Q.12. Explain Laws of Returns and monopoly price determination.

Ans. Laws of Returns and Monopoly Price Determination

Monopoly price is also affected by the laws of returns in the long period. Laws of returns refer to the behaviour of average costs. In the long period, generally three laws of returns operate : (i) Law of increasing returns, (ii) Law of diminishing returns, (iii) Law of constant returns. Figure given below gives the behaviour of the cost lines and their effect on monopoly price and production.



In figure (a), the firm is producing under the law of increasing cost or decreasing returns. Consequently, the average cost and marginal cost curves are rising from left to right. In figure (b), the firm is producing under decreasing cost (increasing returns) and, therefore, the average and marginal cost curves are falling from left to right. In figure (c), the average and marginal cost curves coincide and run parallel to the X-axis as the firm is producing under the law of constant cost or constant returns. In the figure at point P, the marginal cost intersects marginal revenue MC = MR. The monopoly firm is in equilibrium at OQ output. The monopoly price is DQ, and the monopoly profit is represented by the area ABDC.

Q.13. From the following table, determine numerically the best level of output for the monopolist by (a) Total approach and (b) Marginal approach.

Price	20	20	18	16	14	12	10	8
Units	0	1	2	3	4	5	6	7
TC	10	25	35	42	50	60	72	87

Sol. (a) Total Approach

(1) (P)	(2) Output (Q)	(3) TR	(4) TC	(5) Total Profit
20	0	0	10	– 10
20	1	20	25	– 5
18	2	36	35	+ 1
16	3	48	42	+ 6
14	4	56	50	+ 6
12	5	60	60	0
10	6	60	72	– 12
8	7	56	87	– 31

The monopolist would be in equilibrium when he produces and sells units of the commodity at the price of ₹ 12 per unit.

(b) Marginal Approach

(1) P	(2) Q (units)	(3) TR	(4) MR	(5) TC	(6) MC	(7) AC	(8) Profit /units	(9) Total Profit
20	0	0	–	10	–	–	0	0
20	1	20	20	25	15	25.0	– 5	– 5
18	2	36	16	35	10	17.5	0.5	1
16	3	48	12	42	7	14.0	2.0	6
14	4	56	8	50	8	12.5	1.5	6
12	5	60	4	60	10	12.0	0	0
10	6	60	0	72	12	12.0	– 2	– 12
8	7	56	– 40	87	15	10.43	4.53	– 31

The best level of output for the monopolist would be 4 units. As this output both MR and MC are equal to price (₹ 8) and he is getting maximum profit of ₹ 6.

SECTION-C LONG ANSWER TYPE QUESTIONS

Q.1. What are the major factors affecting the expansion of market?

Ans. Factors Affecting the Expansion of Market

Expansion of market means whether the market of a commodity is limited only to a certain place, locality or city, or is spread over the whole country or the world. There are two factors which affect the expansion of market.

1. **Factors Relating to the Nature of Commodities**
   (i) **Demand of Commodity :** The demand of a commodity has direct relation with the size and expansion of the market. If the demand of a commodity is higher, then size of the market will be big. On the other side, if the commodity has limited demand, it will have small market. Cotton, wheat, iron are demanded in the whole world. Therefore, these goods have wider markets.
   (ii) **Portability of Commodity :** The goods which can be carried easily from one place to another have larger markets. These goods have great value in small quantity. These are of light weight and can easily be transported from one place to another such as gold, silver and diamond. Cheaper and weighty goods such as stone, cement, bricks have narrower markets.
   (iii) **Durability of Commodity :** Durable goods such as furniture, gold and silver ornaments, utensils have a wider markets. While perishable goods like milk, paneer, butter, vegetables have narrower markets.
   (iv) **Sufficient Supply of Goods :** The goods having adequate supply according to their demand have larger markets. On the contrary, the goods having inadequate supply have narrower markets.
   (v) **Grading and Standardisation :** If grading and standardisation is easier and the commodities are suitably graded and standardised, their markets will be larger in comparison to other commodities whose grading and standardisation is difficult.
   (vi) **Availability of Substitutes :** The commodities whose substitutes are easily available in the market, have limited markets. On the contrary, the commodities having no substitutes have wider markets.
2. **Internal Conditions Prevailing in the Country**
   (i) **Peace and Security :** Peace and security in a country also help in the expansion of a market. In disturbing and insecure period size of commodity markets becomes narrower.
   (ii) **Selling Techniques :** Modern and scientific methods of sale such as advertisement, (demonstration, exhibition, etc. encourage the expansion of markets.
   (iii) **Transport and Communication :** Developed means of transport and communication help in the expansion of market. Goods can easily be transported from one place to another through these prompt means.
   (iv) **Division of Labour :** Division of labour enables the manufacturers to manufacture goods in huge quantity with low cost of production. Therefore, commodities become available to the customers at low prices which further enables the expansion of market.
   (v) **Monetary and Banking Policy :** Sound and well framed monetary and banking policies are also helpful in the expansion of markets.
   (vi) **Government Policies :** Government policies regarding taxation, trade, etc. also perform an important role in determining the size of the market. Free trade policy expands the markets while restricted policies and heavy duties restrict the size of the markets.

Q.2. Differentiate among perfect competition, imperfect competition and monopoly.

Ans.

Difference among Perfect Competition, Imperfect Competition and Monopoly

Basis	Perfect Competition	Imperfect Competition *Or* Monopolistic Competition	Monopoly
Number	There are large number of firms in the market.	There are many firms but lesser than firms.	There is a single firm.
Knowledge	Perfect knowledge of the market.	Good knowledge of the market.	Good knowledge of the market.
Nature of Product	There are homogeneous products.	There is product differentiation.	There is no product differentiation and close substitutes of the product
Taker or Market	Firms are Price-taker.	The firms are Price-maker.	Firm is Price-maker.
MR and AR	MR = AR and Parallel to the x - axis.	MR < AR, both are downward sloping.	Both MR and AR are downward sloping.
Mobility	There is perfect mobility of factors of production.	No, perfect mobility of factors of production.	No, perfect mobility of factors of production.
Price Elasticity of Demand	Perfect elasticity of demand.	Relatively more elastic demand.	Relatively loss elastic demand.
Selling Cost	There are no selling costs.	There are substantial selling costs.	There are negligible selling costs.
Production	Goods are produced on optimum scale.	Goods are produced below optimum scale.	Goods are produced below optimum scale.
MC	MC = AR (Price)	MC < AR (Price)	MC < AR (Price)
Freedom	There is freedom of entry or exit for firms.	There is no freedom of entry.	Strong barriers to the entry in to the industry exist.
Profit	In the long run, firm gets only normal profit.	In the long run, firm gets only normal profit.	In the long run, a monopolist can get super-normal profit.

Q.3. Explain the various factors which determine the size of the market.

Ans.

Factors Determining Size of the Market

The factors which determine the size of the market can be broadly divided into two following heads :

1. **Nature of the Commodity**
   (i) **Nature of demand :** The size of the market for any product will depend upon the nature of demand for that product. Those goods which are demanded throughout the country and also in different countries will have international market. Cotton, wheat, coal and iron are demanded throughout the world and, therefore, have wide markets.
   (ii) **Durability :** A commodity tends to have wide market when it is durable. The commodity must be such as can be preserved for a long time and can be

transported. to distant places in a safe condition. For example, commodities like gold and silver have got a very wide market. On the other hand goods like fish, meat and vegetables, etc. although universally demanded still have limited local market.

(iii) **Portability :** A commodity which has got great value in small bulk has a very wide market. Even a small quantity of gold or silver has got a great value. Such commodities can bear the cost of long transport. They have got, therefore, a wide market.

(iv) **Sufficient Supply :** A commodity can have a market only when there is a sufficient supply of it. With any increase in demand for it, the supply must rise simultaneously.

(v) **Possibility of Grading and Sampling :** A commodity which can be accurately described by a certain grade or of which a sample can be sent abroad will have generally wide market. Grading and Sampling make it easy for the people to buy and to sell from long distances. Hence, their market is wider. For example, such goods that have ISO-9000 standard makings have world-wide market.

2. **General Conditions Prevailing within a Country :** The above qualities of a product are mainly responsible for the extent of the market. But there are certain general factors which are equally important. But these conditions will apply to all goods though not in the same degree.

(i) **Security and Stability :** With an efficient Government in the country and law and order situation being satisfactory, the market gets extended throughout the country. International understanding and peace can cause smooth functioning of a worldwide market.

(ii) **Transport and Communication :** Developed means of transport and communication is an condition for a wide market. Efficient means of transport like good roads, railways and air transport, etc. Widen the market by carrying the goods to distant places, cheaply and quickly. Similarly, with an improved system of communication, buyers and sellers can establish contact among themselves.

(iii) **Government's Trade Policy :** This is an important factor governing the market for a domestic product in foreign countries. Obviously, the goods that have a wide export market enjoy the favourable trade policies of both, the exporting and importing countries. If there are restrictions imposed by the government on either exports or on imports, the market will be narrowed.

(iv) **Banking and Credit Facilities :** Producers produce in anticipation of the demand. The traders stock the commodities in anticipation of the demand. Many traders and producers are not in such a position to finance all business and production operations. If cheap and adequate credit facilities are available from the banks, the market will be wide.

These are some of the factors which determine the size of the market for different commodities. However, the question of the extent of market is not so important as it was in the past because almost every commodity is now getting an international market.

Q.4. Explain various features of competitive market.

Ans. **Features of Competitive Market**

A perfectly competitive market has the following characteristics :

1. **Large Number of Buyers and Sellers :** In a perfectly competitive market an individual firm supplies a small quantity of the product relative to the market as a whole. The

number of firms in the market is so large that it cannot exert a perceptible influence on price. The number of firms is so large that a single firm is reduced to an atomistic size. Similarly, the number of buyers is very large that no one buyer is able to influence the market price in any way. Actually the price of the commodity determined by the combined actions of all the firms and buyers in the market. Once the price is fixed, each buyer and seller has to accept it. The price is a given datum to the seller and the buyer. They have to adjust their sale and purchase according to the selling market price.

2. **Homogeneous Product :** The product of each seller is standardised or in other words there is no product differentiation. Due to homogeneity among different products available, the product of any one firm is a perfect substitute of the product of any other firm. It does not matter to the consumer whether he buys from X, Y, Z or any other seller. Due to homogeneity of product, a single price will rule over the market.
3. **Freedom of Entry or Exit :** There is free entry of new firms into the market. Similarly, existing firms are free to quit the market. In the event of huge profits accruing to firms in the short-run, new firms can enter the market. Besides, existing firms can expand production. On the contrary, if individual firms are incurring losses in the short-run, they might leave the industry. Owing to freedom of entry and exit, each competitive firm makes only normal profit in the long-run.
4. **Perfect Knowledge :** Consumers and producers possess perfect knowledge about market conditions in a perfectly competitive market. When there is such knowledge, no buyer could be charged a price different from the market price. Sellers also are fully aware of their cost of production and also know the price which is being charged by all other sellers.
5. **Perfect Mobility :** Another condition which a perfectly competitive market must satisfy is that the factors of production must be perfectly mobile between firms. In other words, in response to pecuniary signals each resource required can move in and out of the market. Factor mobility implies the equalising of the price of a given resource geographically and also among all the alternative uses. It also implies that the factor market is also competitive and the factor price is determined not by a single factor, i.e., the buying firm but by the forces of market demand and supply of the factor in question. Perfect mobility also implies that each firm is optimising the use of each factor.
6. **No Transport Cost :** In a perfectly competitive market, all firms are assumed to have equal competitive power. Hence, the element of transport cost difference is ruled out by assuming zero transport cost. If there is difference of transport cost, the competitive strength of two firms supplying identical goods will not be the same in economic sense.
7. **Absence of Artificial Restrictions :** The other condition is that there is complete openness in selling and buying of goods. The buyers are free to buy from any seller. Similarly, sellers are free to sell their goods to any buyer. Prices may change under the market influence. There are no efforts on the part of the producers, the government and other agencies to control the price, demand or supply of the products.

Q.5. Explain various approaches of price determination under perfect competition.

Ans. Price Determination Under Perfect Competition

Price determination is the most important function because every economic activity is measured in terms of money (price). Pricing of commodities is not an easy task. Price determination has been difficult due to different views expressed by the ; economists. The two clear cut views are Classical and Austrian. Let us discuss briefly these approaches :

1. **Classical Approach : Classical economists**—Ricardo, J.S. Mill and Robert Owen, etc. believed that cost of production determines the price of the product.
2. **Austrian Approach :** This theory was developed by Menger and Jevons. This approach is also known as **Psychological** or **Subjective** approach. This approach held that it is the marginal utility operating from the demand side which determines the price.
3. **Synthesised Approach :** Professor **Marshall** critically examined the **Classical and Austrian** approaches and concluded that neither cost of product nor utility alone determines the price. **Marshall** for the first time represented the interrelated role of both demand and supply as agents of price determination. He held that both marginal utility and marginal cost of production are equally important in price determination. **Marshall** presented the analogy of scissors to illustrate his point. He remarked, "We might as reasonably dispute whether it is the upper or under blade of a pair of scissors that cuts a piece of paper as whether value is governed by utility or cost of production. It is true that when one blade is held still and cutting is affected by moving the other, we may say with careless brevity that the cutting is done by the second, but the statement is not strictly accurate, and is to be excused as long as it claims to be merely a popular and not a strictly scientific account of what happens."

Just as the under and upper blades of a pair of scissors cuts a piece of paper similarly both demand and supply are indispensible for determining price:

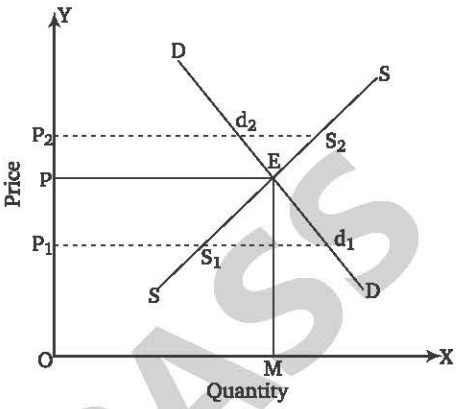
Under **Perfect Competition** price of a commodity is not determined by any individual seller or a firm. It is determined by the forces of market supply and market demand for a commodity. In other words, it is determined by the industry. Equilibrium Price of a commodity is determined at that point where the market demand for the product is equal to its market supply. It is further explained by the given table and fig. The demand and supply schedule of mangoes is shown below :

Price (in ₹)	Quantity Demanded	Quantity Supplied
1	100	10
2	80	20
3	60	30
Equilibrium price		Equilibrium quantity
4	40	40
5	20	50
6	10	60

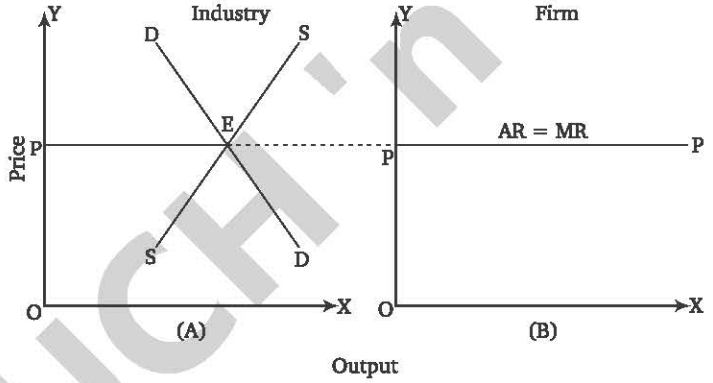
When the price of mango is ₹1 per kg., 100 kilo mangoes are demanded and 10 kg are supplied. With the rise in price, demand is falling and supply is increasing. When the price is ₹4 both demand and supply are 40 kg. This is the equilibrium quantity which has been determined by the equilibrium price of ₹4. This price once established tends to be sticky. If price falls to ₹3, demand rises to 50 kg and supply falls off to 30 kg. This disequilibrium will force the price to go upto ₹4. On the contrary, if price goes upto ₹5 per kg., demand falls to 20 kg and supply increases to 50 kg. Less demand and more supply forces the price down to ₹4. Thus equilibrium is re-established.

In Fig. given aside equilibrium price and output are shown DD is the demand curve and SS is the supply curve. Both intersect at E which is the equilibrium point. At OP equilibrium price

OM equilibrium quantity is sold and purchased. If price falls from OP to OP_1, demand $P_1\ d_1 > P_1\ S_1$ supply and $S_1\ d_1$ represents excess demand. The unsatisfied buyers will compete with one another which will raise the price from OP_1 to equilibrium price OP. If the price is greater than the equilibrium price, say OP_2, the quantity demanded by the buyers is $P_2\ d_2$ which is less than the supply $P_2\ S_2$ $(P_2\ S_2 > P_2\ d_2)$ resulting in an excess supply of $d_2\ S_2$ quantity in the market. Since supply is more than demand competition among sellers will bring down the price to the equilibrium level. Thus, price is determined by the equilibrium between demand and supply or what is called market equilibrium.



Equilibrium Price of Firm and Industry (firm is a Price Taker, not a Price Maker : Prices under perfect competition are determined by industry and each firm 'will have to follow this price. Thus, under perfect competition, a firm is a price taker, not a price maker. It can be shown with the help of given Fig. (B).



In Fig. 2(A) demand curve DD cuts the industry supply curve SS at point E. .Thus, E is the equilibrium point which determines OP as an equilibrium price. Fig. 2(B) reflects the firms demand curve. The firm will have to sell all its output at OP price. The firm cannot increase or decrease their price as it is determined by industry. It is so because under perfect competition firm is a price taker and not a price maker. As such, firms demand curve (PP) will be parallel to OX-axis, signifying that the firm can sell any number of units at OP price. Firm's demand curve PP is also its average revenue (AR) and marginal revenue (MR) curve. Under conditions of perfect competition AR = MR (as AR is constant for a firm) and their curves coincide with each other, *i.e.,* AR = MR.

Q.6. Explain the classification of price discrimination.

Ans. **Classification of Price Discrimination**

A. C. Pigou, in "The Economics of Welfare", has distinguished between three types of price discrimination.

1. Price discrimination of the first degree.
2. Price discrimination of the second degree.
3. Price discrimination of the third degree.

Pigou's concept of 'Degrees of Price discrimination' refers to the extent to which a monopoly firm can appropriate (or take away) the consumers surplus from the consumer and add to its own profits. The discriminating monopolist is able to take away part or whole of the consumer surplus by charging a lower price in the more elastic sub-markets. The extent to which the monopoly firm can appropriate the consumer surplus has been referred as the degree of price discrimination.

1. **Price discrimination of the first degree :** It is also known as perfect price discrimination. Price discrimination of the first degree occurs when the monopolist is able to sell each separate unit of the commodity at a different price. In this case, the seller takes from the buyer the maximum price which he is willing to pay rather than go without the good altogether. Consequently, the buyer is left with no consumers surplus. Such price discrimination can be sucessfully practised by doctors and lawyers who collect different fees from customers depending on their ability to pay price discrimination of the first order is also demonstrated with the help of Fig. a.

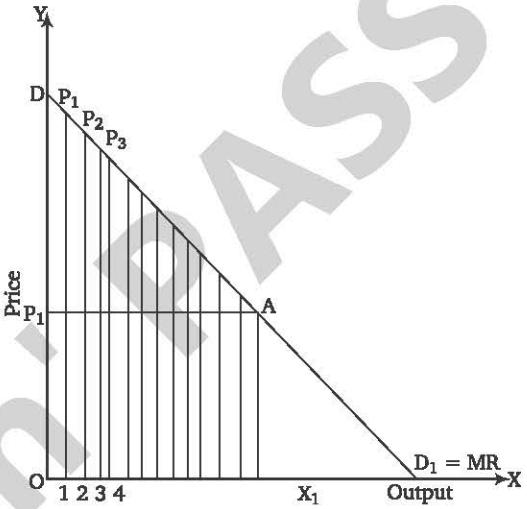


Fig : (a)

In Fig. a, DD_1 is the market demand curve. The monopoly firm negotiates for each unit with each buyer and charges the maximum price as indicated by each point on the demand curve. The first unit will be sold at a price of P_1, the highest price possible under the prevailing demand conditions. The second unit will be sold at a price of P_2, the third at P_3 and so on. The price of each successive unit becomes the marginal revenue for the monopoly firm. Thus, the demand curve becomes the marginal revenue curve of the monopoly firm (D_1 = MR). First degree price discrimination is a limiting case of price discrimination.

2. **Price discrimination of the second degree :** In this type, the seller divides his market into different groups of buyers. From each group of buyers a different price is charged by the seller. The price which the seller charges for each group is that which the marginal buyer is just willing to pay. Price discrimination of second degree leaves some consumers surplus to the buyers. The classification of rail bogies into air-conditioned, first and second classes is an excellent example.

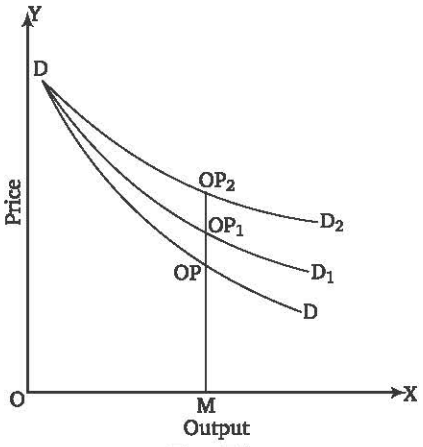


Fig : (b)

3. **Price discrimination of third degree :** Within this the seller classifies his market into different sub-markets. For each sub-market the seller fixes a different price based on the elasticity of demand in

different sub-markets. This position is explained in Figure (b).

The monopolist sells the same quantity in all the three sub-markets, but he charges OP price in one market, OP_1 in the second and OP_2 in the third market based on elasticity of demand.

The major limitation of this classification by **Pigou** is that he has focussed attention only on the allocation of good to the sub-markets without caring to classify the customers.

Price discrimination can also be classified into personal, local and trade categories :

(i) **Personal discrimination :** This happens when the monopolist realises different prices for the same product from different customers. For example, a doctor charges different price for the same service rendered by him.

(ii) **Local discrimination :** Local price discrimination occurs when the monopolist is able to sell different units of the output sold in different states at different prices. For example, a monopolist can charge one price at Allahabad and another price at Rewa for the same commodity.

(iii) **Trade discrimination :** When the monopolist sells the same commodity to one buyer at a higher rate and to another at a lower rate, he could be said to be practising trade discrimination.

Q.7. Explain the various methods adopted by government to control monopoly.

Ans.

Control of Monopoly

When the self-interest of a monopolist assumes alarming productions due to which the interest of the public is adversely affected, it becomes necessary for the government to restrain monopoly power. From time to time, the governments have adopted several measures to curb the abuses of monopolists.

1. Indirect Method

(i) **Anti-monopoly legislation :** In many countries, legislation has been enacted to restrain as well as dissolve monopolies. In the U.S.A., the Sherman Anti-Trust Act of 1880, the Clayton Act and the Federal Commission Act of 1914 and Robinson Patman Act of 1936 were meant to curtail monopoly power and establish fair competition. Howerver, these measures met with limited success. The legislation sought to (a) prevent monopoly firms from coming into existence; (b) if they come from existence, dissolve them and split them into many competing firms; (c) prevent monopoly firms from following unfair practices such as cut-throat competition, full-line forcing, etc.

Legislation could not succeed because (a) the combining firms enter into unwritten agreement regarding output and price; (b) Legislation to bring erring monopolists meet with little sucess as the ingenuity of lawyers helps the monopolist to avoid prosecution or escape all penalties; and (c) destruction of monopolies will result in the destruction of their advantages also. Monopolies provide the advantages of large scale production, financial strength, continuous production, capacity to withstand depression, etc.

(ii) **Maintenance of Fair Competition :** The monopolist resorts to restriction to supply and charging of high prices because he is rest assured that there are no competitors for him. Therefore, if the monopolist is faced with the likelihood of possible competition, he will not exercise his monopoly powers freely.

The monopolist employs various devices to injure and destroy rival firms. Therefore, the government should prohibit these unfair means of competitive commerce. However, to implement this policy is not so easy.

(a) The government may fix prices alone to regulate the policy of rate-cutting, but the monopolist provides other types of concessions and rebates to drive out competitors.

(b) New competitors have limited capital to successfully launch production.

(c) The monopolist reaps the benefit of large-scale production with reduced cost and increased efficiency. This is possible due to the well-established long standing nature of the monopoly firm.

(d) The monopolist has a sound financial position which enables him to spend large sums on competitive advertisement which enables him to capture the market and force the competitors out.

(e) The monopolist can set up his own firms in different names to under sell the products of his rivals.

(f) The existing firms have reputation and enjoys the goodwill of the consumers, which makes it difficult for new firm to compete successfully with it.

On account of these reasons, efforts to regulate the vices of monopoly through maintenance of potential competition will only partially succeed, and it is insufficient to curb the monopoly power.

2. Direct Method

(i) **Monopsony or Purchaser's Association :** To improve the bargaining power consumers, purchasers' association has been recommended. When purchasers combine together in an association, their bargaining power is improved. Theoretically, purchasers' association is possible but in practice there are many difficulties. Firstly, it is very difficult to organise and unite the consumers because they are numerically too many and are spread over a wider area, and secondly, even if such an association is formed it is not essential that the monopolist will meet the demand of the commodity in toto and fix the price accordingly.

(ii) **Publicity :** Publicity as a method of controlling monopoly is generally suggested. If the abuses of monopolists are given wide publicity they will have to face public wrath. Monopoly firms will become afraid of both the government and the public and may adopt more fair and reasonable methods. Publicity is thus a powerful, weapon to regulate monopoly but it alone cannot bring about the desired results. _

(iii) **Direct price regulation :** Frequently, attempts are made to control monopoly price of public utilities like gas and electric power companies. Generally a statutorily instituted commission is entrusted with the fixation of price for these monopolies. Fixation of a maximum price benefits consumers through a lower price per unit and a greater volume of goods available for consumption. It acts as a check on the monopolist from receiving all the advantages of his monopoly position. It forces him to expand output to the point at which marginal cost equals the price of the product. Ultimately the monopolists' profit is lower than it was before legislation.

Nevertheless, fixing a fair price has many practical difficulties, *viz.*, (a) How to estimate the cost of production, (b) how much margin of profit should be left to the monopolist; and (c) what should be the margin fixed for good and bad years.

Normally price and production can be controlled in the following ways :

(a) Fix the price in such a way that it is equal to marginal revenue and marginal cost (P = MR = MC).

(b) The price can be fixed at that point where the marginal cost of production equal to the average revenue.

P = MC = AR

Marginal cost represents the price of factors of production while marginal revenue shows the utility which the consumers derive from the commodity. Therefore, from the social point of view it is feasible to fix the price according to the marginal cost.

(c) Price may be fixed at that point where average cost equals average revenue (P = AC = AR). Simultaneously, the minimum amount of production should also be fixed which leaves the monopolist with only normal profits.

(iv) **Public ownership :** Where the monopoly industry is essential for the country and elimination of monopoly socially desirable then the concerned industry should be brought under public control. However, the government takeover suffers from the following shortcomings,

(a) corruption and inefficient management is a hindrance in the efficient conduct of public enterprises.

(b) government ownership and control of monopoly services will lead to waste of resources, and

(c) concentration of too much power in the hands of public monopoly enterprises will also result in the abuse of power and adversely affect the freedom of the citizens.

Q.8. Explain the various types of markets.

Ans.

Classification of Market

Market may be classified into different types :

1. **On the basis of Area :** Markets may be classified on the basis of area into local, national and international markets. If the buyers and sellers are located in a particular locality, it is called as a local market, e.g., fruits, vegetables, etc. These goods are perishable they cannot be stored for a long time, they cannot be taken to distant places. When a commodity is demanded and supplied all over the country, national market is said to exist.

   When a commodity commands international market or buyers and sellers all over the world, it is called international market. Whether a market will be local, national or international in character will depend upon the following factors.

   (i) Nature of commodity,

   (ii) Taste and preference of the people,

   (iii) Availability of storage,

   (iv) Method of business,

   (v) Political stability at home and abroad; if portability of the commodity.

2. **On the basis of Time :** Time element has been used by Marshall for classifying the market. On the basis of time, market has been classified into very short period, short period, long period and very long period. Very short period market refers to the market in which commodities that are fixed in supply or are perishable are transacted since supply is fixed, only the changes in demand influence the price. The short period markets are those where supply can be increased but only to a limited extent. Long period market refers to a market where adequate time is available for changing the supply by changing the fixed factors of production. The supply of commodities may be increased by installing a new plant or machinery and the output can be changed accordingly. Very long period or secular period is one in which changes take place in factors like population, supply of capital and raw materials, etc.
3. **On the basis of Volume of Business :** Based on the volume of business, markets are broadly classified into wholesale and retail markets. In the wholesale markets, goods are transacted in large quantities. Wholesale markets are in fact, a link between the producer and the retailer while the retailer is a link between the wholesaler and the consumer.
4. **On the basis of Competition :** Markets are classified on the basis of nature of competition as :
   (i) Perfect competition
   (ii) Imperfect competition
      (a) Monopolistic competition
      (b) Duopoly and oligopoly
   (iii) Monopoly.

(i) **Perfect Competition :** The term market structure refers to the degree of competition prevailing in that particular market. "The more nearly perfect a market is, the stronger is the tendency for the same price to be paid for the same thing at the same time in all parts of the market." —Marshall

"A market is said to be perfect when all the potential sellers and buyers are promptly aware of the price at which transactions take place and all of the offers made by other sellers and buyers and when any buyer can purchase from any seller and vice-versa." —Benham

Thus, perfect competition is a market situation where a colossal amount of buyers as well as sellers possessing complete knowledge of the market come together to afford the similar products. In perfect competition, the demand curve is perfectly elastic.

(ii) **Imperfect Competition :** It is the mixed situation of perfect competition and monopoly. In this condition of market the demand of commoditiy is not perfectly elastic. The demand curves has a falling trend. Imperfect competition may be of the following types in the market :

(a) **Duopoly :** The other forms of market situations, Duopoly and Oligopoly are dealt in this chapter. When there are few sellers of homogeneous or differentiated product, it is the oligopoly market structure. If there are only two sellers, it is Duopoly market structure.

When there are two monopolists who share the monopoly power then it is called duopoly. It may be of two types duopoly without product differentiation and duopoly with product differentiation.

Under duopoly without product differentiation, there are two monopolists selling an identical commodity. There is no product differentiation. There is also a possibility for collusion. They may agree on price or divide the market for goods. Suppose, if there is no agreement between the two, a constant price war will emerge. In this case they will earn only normal profits. If their costs are different, the one with lower costs will squeeze out the other and a simple monopoly would result. The best course for the duopolists will be to fix the monopoly price and share the market and profits.

In the short-run, duopoly price may be lower than the competitive price. In the long-run, the price may be somewhere between the monopoly price and the competitive price. When there is product differentiation, each producer will have his own customers. There is no danger of price, war. There is no agreement. Since products are differentiated the firm with better product who earn supernormal profits.

(b) **Oligopoly :** The type of market condition, which is most appropriate in the todays economy, is oligopoly. It is characterized by mutual interdependence among a few sellers who control the total market supply. Oligopoly, therefore, occurs when there are only a few sellers. It differs from both monopoly and perfect competition and from monopolist competition.

"Oligopoly is a market situation in which there are a small number of sellers and the activities of every seller are important for others." — Prof Leftwitch

"Oligopoly is a market where a small group of producers, have significant control over major portion of the market demand, with or without differentiated product."

"Oligopoly is market situation in between monopoly and perfect competition in which the number of sellers is more than one but is not so large that the market price is not influenced by any one of them." — Mrs. John Robinson

"Oligopoly is market situation in which a firm determines its marketing policies on the basis of expected behaviour of close competitors." — Prof George J. Stigler

"Oligopoly is different from monopoly on one hand in which there is a single seller, on the other hand, it differs from perfect competition and monopolistic competition also in which there is a large number of sellers."

— Prof Stoneur and Hague

(c) **Monopolistic Competition :** Perfect competition and monopoly are rarely found in the real world. Therefore, professor Edward H. Chamberlin of Harvard University brought about a synthesis of the two theories and put forth "Theory of Monopolistic Competition" in 1933. Monopolistic competition is more realistic than either pure competition or monopoly. It is a blending of competition and monopoly.

"There is competition which is keen though not perfect, between many firms making very similar products." Thus monopolistic competition refers to competition among a large number of sellers producing close but not perfect substitutes.

(iii) **Monopoly :** Monopoly is the extreme case of the imperfect market. It is a market under the imperfect market structure. It is often criticized by many as a source of inefficiency and exploitation. Yet its existence poses a challenge to many businesses as well as individuals. In tatting business decisions managers always attempt to appreciate the market condition in which their competitors are operating. In this unit, issues relating to the monopoly as a form of market will be considered. Such issue shall include the meaning, reason for their existence, and their pricing condition.

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 this product. Monopoly is that market form in which a single producer controls the entire supply of a single commodity which has no close substitutes. There must be only one seller or producer. The commodity produced by the producer must have no close substitutes. Monopoly can exist only when there are strong barriers to entry. The barriers which prevent the entry may be economic, institutional or artificial in nature for, instance Indian Railways and State Electricity Board.

Q.9. What do you mean by normal price? Discuss the process of determination of normal price.

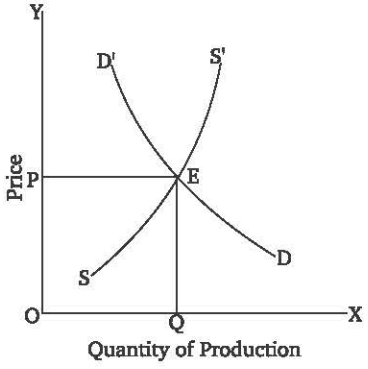
Ans.

Normal Price

Normal price is the price which is determined in long period with the action of long period demand and supply. In its determination supply also plays an important role with demand because supply can easily be adjusted according to demand. Normal price is a permanent price. It does not change frequently. Because it is affected by general factors and these factors do not change so often. Normal price is influenced by the cost of production i.e., prime cost and supplementary cost.

Process of Determination of Normal Price

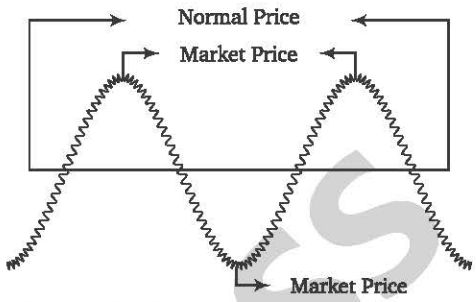
Normal price is the price which prevails in the market in long perod. Long period is such a time in which demand and supply can easily be adjusted to each other. In this way normal price is determined at a point where demand curve and supply curve both cut each other. It can be explained with the help of adjacent diagram.



In this diagram, DD is demand curve coming downward while SS is supply curve going upward. Both curves cut each other at point E. So it is equilibrium point. Here equilibrium quantity is OQ and equilibrium price is OP, which is considered as normal price. If we draw a line from E parallel to X-axis, it shows that normal price remains stable. It is not frequently changed like market price.

Market Price moves up and down around the Normal Price—But has a tendency to merge with the Normal Price.

Market Price is changeable price made normal price is stable price trend to equal to normal price. In fact it moves around to normal price. It can fairly be explained with the help of following diagram.



In this diagram, the thick straight line represents the normal price whereas the line moving in zig-zag from around the straight line represents the market price. Market price is sometimes higher than the normal price and sometimes lower than the normal price. Now we can say that market price moves around the normal price. Its nature is to mix with normal price. For a long period it cannot stand upper or lower than the normal price. At last it becomes equal to normal price but this tendency prevails for sometime only. It is due to the fact that if market price is higher than normal price, sellers earn more profits. They increase the supply of commodity. Thus market price comes down and becomes equal to normal price. On the contrary if the market price is lower than normal price, sellers suffer losses. They decrease the supply of commodities. Thus market price comes up and again becomes equal to normal price. Now on the basis of above explanation it is right to say that market price moves up and down the normal price—but has a tendency to merge with the normal price.

Q.10. What do you mean by oligopoly? Discuss the main features of oligopoly.

Ans.

Oligopoly

The term oligopoly is coined from two Greek wrods 'oligiol' meaning a few and 'pollein' meaning to sell. Oligopoly is an important form of imperfect competition where there are few firms in the market producing either homogeneous products or close substitutes.

Prof. George J. Stigler defined oligopoly as "that situation in which a firm bases its market policy in part on the expected behaviour of a few close rivals."

William Fellnser refers to it as "competition among the few". if there are only two firms in the market, it may be called Duopoly, but it is a special form of oligopoly because from the point of view of price theory the nature of the problem is the same whether there are two or a few sellers. Although there are no border line between few and many but when the number of sellers of a product are two to ten, then oligopoly situation is said to exist.

Oligopoly is also referred to as 'limited competition', 'incomplete monopoly', multiple monopoly', etc. The prices and productions of many products such as steel, aluminium, cars tyres, heavy electrical equipments, etc. are determined by a few firms in each of the industries that produce them.

Main Features of Oligopoly—The following are the important features of oligopoly :

1. **Monopoly Power :** The first characteristic of an oligopoly firm is its monopoly power. The oligopoly firm is not an absolute monopoly since it is not the only firm constituting the industry. But in terms of its market position as well as in some of its business practices, the oligopoly firm is monopolistic in character.
2. **Interdependence :** Under oligopoly, a firm cannot take independent price and output decision. As the number of competing firms is limited, therefore, each firm has to take into account the reactions of the rival firms. Price and output decisions of one oligopoly firm have considerable effect on the price and output decisions of the rival firms.
3. **Indeterminate Demand Curve :** The interdependence of the firms make their demand curve indeterminate. When one firm reduces price, other firms also will make a cut in their prices. So the firm cannot be certain about the demand for its product. Thus, the

demand curve facing and oligopolistic firm loses its definiteness_ and thus is indeterminate as it constantly changes due to the reactions of rival firms.

4. **Role of Selling Costs :** Advertising plays a greater role in the oligopoly market when compared to other market systems. A huge expenditure on advertising and sales promotion techniques is needed both to retain the present market share and to increase it.
5. **Conflicting Attitude of Firms :** Under oligopoly, firms do not have a co-operative attitude towards each other. At times, the firms realize the disadvantage of mutual competition and desire to combine together to maximise their joint profits. The tendency at such times is towards collusion to serve their common interests. After some time dissatisfaction of one firm or the other may lead to competition including cut-throat competition. In oligopolistic industries, price stability prevails most of the time but price wars also frequently take place. Firms may clash on the questions of distribution of profits and market allocations. Thus, two conflicting attitudes are at work under oligopoly — one of co-operation and united action and the other of conflict and antagony. This creates an atmosphere of uncertainty under oligopoly.
6. **Lack of Uniformity :** Another feature of oligopoly market is the lack of uniformity in the size of firms. Firms do not conform to standard size. Some may be small, others very large. This is a common feature of the American economy.
7. **Price Rigidity :** Another important feature of oligopoly with product differentiation is the existence of price rigidity under it. Prices tend to be rigid under oligopoly. If a firm introduces a price cut, the customers of rival firms are attracted towards it. The rival firms will retaliate by cutting down their prices. Thus the price war will ensure which will benefit none. Hence, an oligopolistic firm will make no attempt to resort to price reduction. On the other hand, if a firm raises the price the rival firms will not follow suit. The firm which raises the price, will itself out of the market to the advantage of the rival firms. Thus, the net result will be price stability in the market. Firms tend to stick to the established price and limit their competitive effort to non-price competition.

Q.11. Explain any two main models of pricing under oligopoly.

Ans.

Main Models of Pricing under Oligopoly

Following are the two main models of pricing under oligopoly :

1. Kinked Demand Curve Models
2. Pricing under Collusion

These are discussed as follows :

1. **Kinked Demand Curve Models :** The Kinked demand curve was used by **Hall and Hitch** to explain why the price fixed by their average cost pricing principle, remain sticky or rigid. But kinked demand curve as a tool for the determination of the equilibrium in oligopolistic market was first used by **Paul Sweezy** in 1934.

   The kinked demand curve, analysis does not deal with price and output determination. Rather, it seeks to establish that once a price-quantity combination has been determined, an oligopoly firm will not find it profitable to change its price even when the cost and demand conditions change. It refers to a state of price rigidity.

   Basic Features—The kinked demand curve model of oligopoly as developed by **Sweezy** has the following basic features :

(i) If an oligopoly firm reduces the price of its product (below the ruling price), it will invite immediate reaction from its rivals. The rivals, who wish to protect their own sales will also reduce the price.

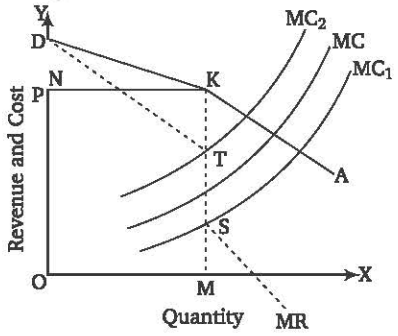
(ii) But, if an individual firm raises the price of its product, his rival firms do dot follow and they do not raise the price of their products. This is because the rival firms would be keen to attract customers away from this firm by keeping their prices unchanged.

In short, any price rise by an individual firm is not followed by rival firms. But any price cut by an individual firm is followed by rival firms.

Two Slopes of Firms Demand Curve or Kinked Demand Curve : The demand curve of the firm (or firms average revenue curve) will have two different slopes :

(i) Since any **price rise** by an individual firm is not followed by other firms, this firm will lose its share of the market and demand will fall considerably. Hence, the average revenue (AR) or demand curve of this firm (which raises the price) will be flatter (or more elastic) at the upper stretch of the demand or Average Revenue Curve.

(ii) Any **cut in the price** of the product by an individual firm is followed by rival firms who also reduce the price of their products. Thus, the firm fails to expand market. Hence, the average revenue or demand curve of the first firm will be relatively 'Steep' (or inelastic at the lower stretch.



When an individual firm's demand curve or Average Revenue Curve has two different slopes—**flatter** at the upper stretch (more elastic) of the curve and **steep** at the lower stretch (inelastic) a **'kink'** is bound to occur in the demand or average, revenue curve of the firm as shown in Fig.

(a) In the Fig, a kink demand curve is made of two demand curves DK and KA. Both of these join at point K. Point K is the point of kink in this diagram.

(b) This kink K is at the ruling price OP, DK portion of the demand curve is more elastic showing that the oligopolist will lose his customers if he raises his price.

(c) KA portion of the demand curve is less elastic showing that he cannot increase his sales by reducing price.

(d) The marginal revenue (MR) curve corresponding to this kinked demand curve is composed of two discontinuous dotted line segments. The NT portion of the MR curve relates to the demand curve DK and SMR portion relates to demand curve KA.

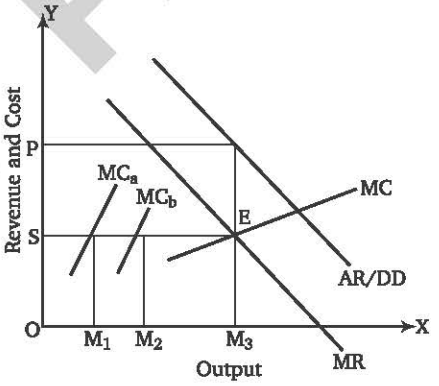
(e) The equilibrium of the firm will be at the point where MR equals MC. The firm will be in equilibrium at the output OM and the price will be KM (= OP). At this point he enjoys maximum profit.

(f) If the cost of production changes, it will give rise to a new MC_1 and MC_2 curve (See Fig. below). As there is discontinuity in the MR curve, shifts in MC curve between T and S will not alter the equilibrium position. Thus, it can be viewed that under oligopoly, despite variations in costs and demand, the price remain unchanged or rigid.

Evaluation : Sweezy's kinked demand curve model only explains the stabilisation of output and price. But it does not tell why and how the initial price is fixed at OP. Empirical evidence has given little support to the model as a theory of long-run pricing strategy in oligopolies.

2. **Pricing Under Collusion :** In an oligopoly when there is a small number of producers, all firms could benefit if they could get together and behave as if they were a monopoly. If they could agree upon prices, output market areas, use and construction of productive capacity, advertising expenditures and the purchase and use of inputs such an agreement is reached openly and formally, the group is called a **Cartel.**

The Purpose of the cartel is to eliminate competition and fix such a price and produce such a quantity that will maximise industry profits. Under cartel agreements, "the firms jointly establish a cartel organisation to make price and output decisions, to establish production quotas for each firm and to supervise the market activities of the firm in the industry." In actual collusion, the agreement is only on the price which is generally the joint profit maximising price and the member firms are free to produce and sell the output which will maximise their individual profit subject to the fixed agreed price.



Let us now see how the cartel works and determines its price and output with the help of Fig. given above.

Let us assume that two firms have formed a cartel by entering into a formal agreement. First of all the cartel will estimate the demand curve of the product. AR (DD) is the industry demand curve shown in the figure. From the AR curve it is possible to derive its marginal revenue curve (MR). The next step will be to find the marginal cost curve of the industry. The marginal cost curve has been obtained by adding horizontally the marginal cost curves of the two firms. In the above Fig. the marginal cost curves MC_a and MC_b of the two firms are added to obtain MC curve. The MC curve indicates the minimum possible total cost of production of the industry. The total output of the industry is allotted in such a way that the marginal cost of each of the individual firms is the same. If the marginal cost of any of firms is higher than the other, then the total cost of the industry can be reduced and the total joint profit increased by transferring output from the high marginal cost firm until the marginal costs of both the firms are equalized.

Now firm A produces OM_1 output as a marginal cost of OS. Firm B produces a larger output, i.e., OM_2 at the same marginal cost OS. The combined production of the two

firms is $OM_1 + OM_2$ output at a marginal cost of OS. By adding together the two outputs, we obtain the total output OM_2 of the industry at a marginal cost OS. The point of equilibrium is at point E. The joint profits of the industry will be maximized at equilibrium output OH_3 because at this level marginal cost and marginal revenue of the industry are in equilibrium. At point E, MR = MC. The output OH_3 will be sold at OP price. The total output will be allocated between the two firms in such manner that the marginal cost of each firm will be the same and will be equal to the industry marginal revenue. Firm A will produce OM_1 output while firm B will produce OM_2 output. The price charged both the firms will OP. The cartel will thus be able to maximize the joint profit in this way.

These profits will be divided among the member firms according to the terms of agreement between them at the time of the formation of cartel. It is possible that the profits may be shared on the basis of the proportion of output. It is also likely that the relative bargaining power of the firms may determine the division of profits. **J.S. Bain** says, "There is no particular reason for believing that the operating firms will retain just the profits resulting from the sale of their quotas which are determined on cost grounds above. Relative bargaining strengths will presumably determine the division of profits."

The above method of centralised pricing may not be generally adopted by the oligopolistic firms due to the following reasons :

(i) The Government may prevent the formation of cartel through legislation.

(ii) The constituent firms may be unwilling to submit themselves to the control of central cartel.

(iii) The entry of new firms will upset the calculations of the cartel.

Q.12. Elaborate the price leadership form of pricing policy under oligopoly.

Ans. Price Leadership form of Pricing Policy under Oligopoly

An important form of price fixation under oligopoly is known as price leadership. It refers to that market situation in which price is determined by one firm in the industry which the other firms in the industry accept.

There are four major variants of price leadership :

1. Dominant firm model.
2. Low cost firm model.
3. Barometric firm model.
4. Aggressive firm model.

1. **Dominant Firm Model :** In the dominant firm type of leadership, one firm produces major portion of the output of the industry. The other smaller firms together produce the balance of the output. None of these small firms produces enough output to have any determinate effect of price. The result is that the dominant firm fixes the price which other firms accept. If the small firms charge a higher price above the price set by the leader, they are likely to lose all their sales. On the other hand, if they fix a price below the price set by the dominant firm, they do not secure any advantage as they could easily dispose off all their output at the price of the dominant form. Therefore, the average revenue curve (AR) for the follower firms is a horizontal line parallel to the

X-axis. They are required to adjust their output to the point at which their marginal cost is equal to the price determined by the dominant firm. Generally prices are uniform if the products are physically homogeneous. If the products are differentiated, prices can be uniform to a given pattern of differentials. The price leader makes price changes from time to time. The smaller firms follow suit with motives ranging from fear to convenience, to laziness. The smaller firms believe that profit will be greater in the long-run under price leadership that could be obtained under alternative pricing arrangements.

The model given above can work only on fulfilling the following conditions :

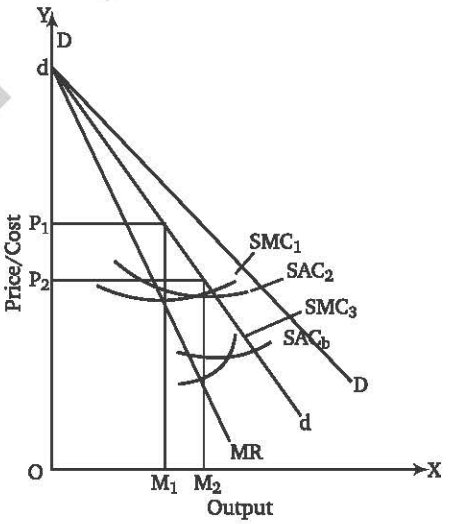
(i) The dominant firm has control over market price.

(ii) All other firms are like pure competitors. Their demand curves are perfectly elastic for they sell at the price set by dominant firm.

(iii) The dominant firm alone is in a position to estimate the market demand curve of the product.

(iv) The dominant firm is in a position to predict the supplies of other firms at each price set by it.

2. **Low Cost Firm Model :** Suppose, there are only two firms and they have entered into a tacit market sharing arrangement, each firm assigned half the market. Further suppose that they produce homogeneous products, but one firm is having lower costs than the other. The price and output policies of the two firms will differ, because of the different costs of the two firms.



In this Fig., DD is the market demand curve. Each of the two firms has demand curve dd. SAC, and SMC are the short-run average cost curve and marginal cost curve of the higher cost firm A. The marginal revenue curve of each firm is MR. Thus, OP_1 is the price at which profit will be maximum for the higher cost firm A and its output is OM_1 The 0 sMci lower cost firm B has an output OM_1 at OP_1 price which is lower than OP_1 price of firm A. The low cost firm B by virtue of low cost will be the price leader and firm A will be follower.

It should be noted that having been compelled to charge price OP_2, the firm A will produce and sell OM_2 output. This is because at price OP_2 it can sell OM_2 output like firm B. Thus, both the firms will charge the same price OP_2 and sell the same output OM_2. While firm B will be maximising the profits by selling output OM_2, the firm A will not be making maximum profits with this price-output combination because its profits are maximum at output OM_1 and price OP_1

3. **Barometric Firm Model :** In the barometric price leadership an old experienced firm, not necessarily dominant one, assumes the role of the leaders and fixes a price acceptable to all the firms in the Industry. Usually it is a firm which from past behaviour has established the reputation of a good forecaster of economic changes. The price

change announced by the leader services as a 'barometer' that reflects the changing demand and supply conditions in the market. The barometric price leader does not act to impose its decisions on others but rather indicates changes that seem desirable in the market.

In order to fix the price, this experienced firm takes into consideration the demand for the product, cost of production, competition from the rival producers etc. The leader while fixing the price, does not look after its own interest, rather it considers the interest of all the firms in the industry. As the leader protects the interests of all the firms in the industry, all the firms happily follow the price leader.

4. **Aggressive Firm Model :** When the dominant firm wants to eliminate its rivals, in the market, it may turn to aggressive price leadership. For this it may use both legal and illegal methods. The other firms unwillingly accept the leader and the price fixed by it.

Advantage of Price Leadership : Price Leadership arrangements are justified on such grounds as price stability, customers, preference for stable prices and selected prices, being consistent with oligopolists profit goals at more or less normal capacities.

Difficulties of Price Leadership : The difficulties of price leadership are given below :

(i) The success of price leadership depends on the correct evaluation of the reaction of the followers. If his calculations prove incorrect, then the success of the price policy and leadership will be in jeopardy.

(ii) When leader fixes price higher than the followers would prefer, there is a tendency for followers to make hidden price cuts in order to increase their share of the market without challenging the leader.

(iii) Another lacuna of this method is the tendency on the part of rivals to indulge non-price competition to increase sales. This includes advertising and other methods of sales promotion like improvement in the quality of the product, hidden price cuts, etc.

To conclude, we can say that oligopoly is more common but since it can take various forms, a single model cannot explain its price 'and output equilibrium.

Q.13. Explain various approaches of price determination under monopoly.

Ans. Price And Output Determination Under Monopoly

Like the firms working under perfect competition, the goal of the monopolist is also to maximise profits. The monopolist gets maximum profit when he is producing equilibrium output.

Under monopoly equilibrium output and price are determined by two different approaches :

1. Total Revenue and Total Cost Analysis
2. Marginal Revenue and Marginal Cost Analysis

1. **Total Revenue and Total Cost Analysis :** The TR and TC curves method applies to a monopoly firm as well as to firms in other kinds of market structure. According to this approach, a firm is in equilibrium when it produces that amount of output at which the difference between Total Revenue (TR) and Total Cost (TC), i.e., Total Profit, is maximum.
2. **Marginal Revenue and Marginal Cost Analysis :** Another method to find out the profit maximising output and price for a firm under monopoly is to calculate its marginal cost (MC) and marginal revenue (MR) at different level of output.

According to this approach, a monopolist will be in equilibrium when two conditions are fulfilled, *i.e.,* (i) MC = MR and (ii) MC must cut MR from below, i.e., slope of MC > slope of MR. Once the profit maximising output level is determined the monopolist finds out the price at which this quantity can be sold. Accordingly the price is determined. The equilibrium output level and the corresponding prices are illustrated with the help of the following table 1 :

Table 1 : Determination of Equilibrium Output and Profit.

Quantity (Q)	Price AR (₹)	Total Revenue	Total Cost	Total Profit*	Marginal Revenue	Marginal Cost	
10	31	310	260	50	—	—	MR > MC
11	30	330	274	56	20	14	
12	29	348	289	59	18	15	
13	28	364	305	**59**	**16**	**16**	MR = MC
14	26	364	322	42	0	17	MR < MC
15	24	360	340	20	– 4	18	

* Total Profit = TR – TC

Monopolist earns maximum profit of ₹ 59 when he produces 13 units of the commodity. At this output level, the MR is ₹ 16 and it is just to MC which is also ₹ 16. Total profits are less if the monopolist produces more that 13 units.

Firms equilibrium could be explained by means of a given Fig. (a):

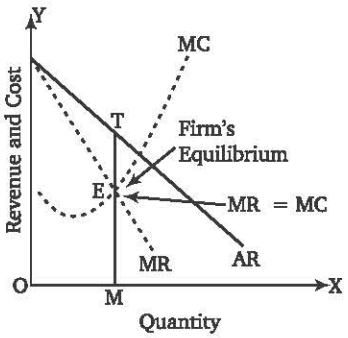


Fig : (a)

It would be seen from Fig (a) that at point E monopolist's MR = MC and MC is rising. E is the equilibrium point. Output corresponding to E is equilibrium output. It is OM. Monopolist will produce and sell OM output at MP price per unit.

Short Period and Long Period Equilibrium : A monopolist earns maximum profit when he is in equilibrium. The situation of equilibrium may be studied with refernce to :

(i) Short period and, (ii)Long period.

Price and Output determination under Short Period or Short-run Equilibrium : Since in the short period, the time available is not sufficient to alter production, to adjust with the demand. Hence, in the short-run a firm can be in equilibrium in the following three positions with respect to profits. The difference between AR and AC gives us profit or loss per unit of output.

1. If at equilibrium, Average Cost is less than Average Revenue (Price) (*i.e.,* AR > AC). The firm gets supernormal profits.
2. If at equilibrium, Average Revenue is equal to Average Cost (*i.e.,* AR = AC). The firm gets normal profits.
3. If at equilibrium, Average Revenue is less than Average Cost (*i.e.,* AR < AC), firm gets least negative profits or suffers minimum losses.

Let us elaborate the three position with suitable diagram.

In Fig. (b), three different situations have been illustrated. In all the three situations, point E is the equilibrium point (where MR = MC). OP is the price at which the monopolist decides to sell his product.

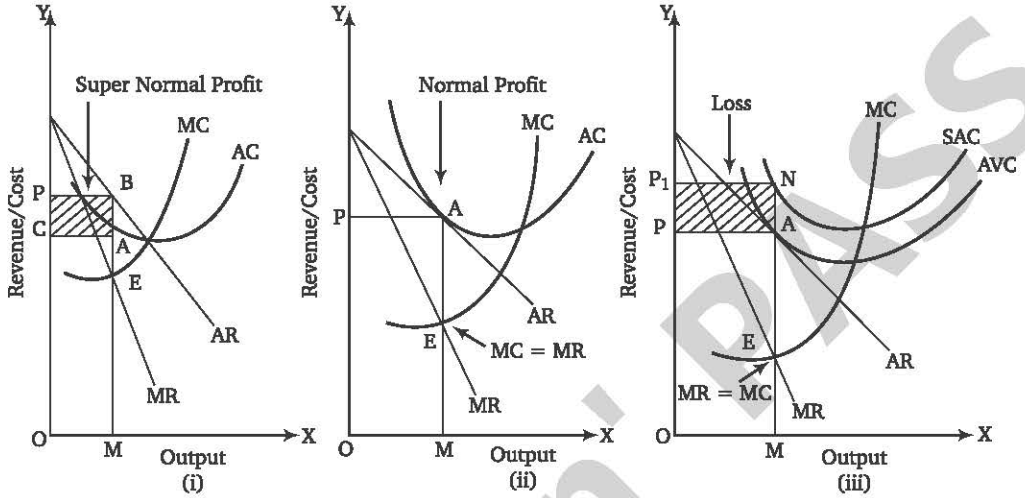


Fig : (b)

1. **Super Normal Profit :** In Fig. (b) (i) , the monopolist will produce OM units of output and sell it at MB price which is more than average cost AM by BA per unit (BM – AM = BA). Thus, this situation the total super normal profit of the monopolist will be ABPC.
2. **Normal Profit :** In Fig. (b) (ii), OM is equilibrium output. At this output, average cost (AC) curve touches average revenue (AR) curve at point A. Thus, at point 'A' price OP (AR) is equal to the average cost (AM) of the product. Monopoly firm, therefore, earns only normal profit in equilibrium situation, as at equilibrium output is AC = AR.
3. **Incurring Loss :** In Fig. (b) (iii), OM output is being produced at MN cost per unit, but this is being sold at AM price per unit. Monopolist incurs a loss of AN per unit. His total loss is being represented by the shaded area ANP_1P.

But a question arises as to why the firm produces when it is incurring losses?

A loss-incurring monopolist's decision to continue with production will depend on its average variable costs (AVC) (as in the case of perfectly competitive firm, as already illustrated). We can conceive of three situations.

(i) AR > AVC, (ii) AR = AVC, (iii) AR < AVC

A loss-incurring monopolist will continue to produce as long as his AR is more than or equal to his AVC. This situation of equilibrium is shown in Fig (b) (iii). According to this figure, the price of equilibrium output OM is fixed at OP (AM). At this price, average variable cost (AVC) curve touches AR curve at point A. It means that the firm will cover only average variable cost (AVC). So it will be incurring the loss total fixed cost. It will constitute the minimum loss to the firm and it will continue its production even at this price.

In case price falls below OP_1 then firm will not be able to meet its average variable cost even. It will constitute more than minimum loss and to avoid it the firm will prefer to shut down its

production. Thus, shut down price is the price below which the firm choose not the produce at all.

Some important conclusions drawn from the above discussion regarding determination of output and profit/loss in short period under monopoly are given in the table 2.

Table 2 : Output Determination under Monopoly— Some important Features

1. **Should the firm produce at all**	1. (i) If MR = MC or (ii) AR is not less than AVC
2. **What quantity should be produced to maximise profits**	2. Where MR = MC and MC curve tends to rise
3. Will production result in (i) Super Normal Profit (ii) Normal Profit (iii) Loss ?	3. Yes if (i) AR > AC (ii) AR = AC (iii) AR < AC
4. Shut Down Point	4. AR = AVC

Determination of Long-run price or Long-run Equilibrium : The monopoly price determination in the long-run is similar to that under the short period. In the long-run the monopoly firm adjusts its capacity to changes in long-run demand. After these adjustments are completed the monopoly firm will have a long-period equilibrium determined by the equality of long-period marginal cost (LMC) and long-period marginal revenue (MR) as shown diagrammatically in Fig. (c).

In Figure (c), monopolist's equilibrium, is determined at the point E, where MR = LMC, corresponding output OM is produced at OB cost per unit, and is sold at AM per unit. The firm makes profit, equal to BM per unit. Total profits of a monopolist are being shown by the shaded area ABPN.

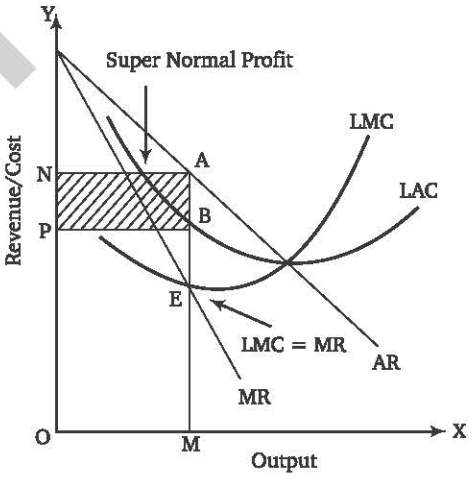


Fig : (c)

UNIT-IV

Business Cycle

SECTION-A VERY SHORT ANSWER TYPE QUESTIONS

Q.1. What do you mean by business cycle?

Ans. A business cycle is the natural expansion and contraction of economic growth that happens in a nation over a period of time. The rise and fall of a nation's gross domestic product (GDP) defines the start and end of a business cycle, which is also known as an economic cycle or a trade cycle. A business cycle accounts for the growth and decline of economic activity over time.

A nation's government can manage a business cycle using a variety of tools. The central bank can use monetary policy to reduce interest rates, which can encourage spending and investments. The legislature can use fiscal policy to encourage or slow down economic growth.

Q.2. Explain the term 'expansion' as a phase of business cycle.

Ans. Expansion is the first phase of a business cycle. It is often referred to as the **growth phase**. In the expansion phase, there is an increase in various economic factors, such as production, employment, output, wages, profits, demand and supply of products, and sales. During this phase, the focus of organisations remains on increasing the demand for their products/services in the market.

Q.3. Discuss peak as a phase of business cycle.

Ans. Peak is the next phase after expansion. In this phase, a business reaches at the highest level and the profits are stable. Moreover, organisations make plans for further expansion.

Peak phase is marked by the following features:

1. High demand and supply
2. High revenue and market share
3. Reduced advertising
4. Strong brand image

Q.4. What do you mean by theory of factor pricing and marginal productivity theory?

Ans. 1. **Modern theory of factor pricing :** According to this theory price of the factor determined both by its supply as well as demand parameters. Demand for a factor is determined largely by its revenue productivity besides that demand and price for the final product produced by the factor. Supply of the factor is determined by several factors. The equilibrium wage is determined by the intersection of the demand and supply forces.

2. **Marginal Productivity Theory :** According to this theory evolved by J. B. Clark (a) Under perfect competition : a price of the factor equals its marginal revenue productivity, (MRP) and (b) a firm will employ a factor upto a point till price of the factor (or marginal cost) of the factor is equal to its marginal-revenue productivity.

Q.5. What do you mean by term 'wages'?

Ans. The term 'wages' means the reward paid to the workers as agents of a factor of production called labour. Wages are understood in the micro and macro sense. In the micro sense, wages are the payment made to a worker by a particular firm. **Benham** defined wages, "as a sum of money paid under contract by an employer to a worker for services rendered." In the macro sense, wages are that part of the national income which goes to those who work with their hands or brains, whether independently or for an employer. We shall treat wages in the micro sense in this chapter. It is only in our discussion of the share of wages in national income that we shall use wages in the macro sense.

Q.6. Discuss briefly Modern and Ricardian Theory of Rent.

Ans. 1. **Modern Theory of Rent :** According to the modern theory : (i) Rent is the difference between actual earning and transfer earning of a factor. (ii) It can accrue to any factor of production provided its supply is not perfectly elastic. (iii) From the view point of the firm, rent does enter into price, though from the view point of the industry or the economy, it does not.

2. **Ricardian Theory of Rent :** According to Ricardo,
   (i) Rent arises because of differences in fertility of land. When a less fertile land is cultivated, the more fertile land earns a surplus which is rent.
   (ii) Rent may arise due to expensive and intensive cultivation of land and also due to situational advantage.
   (iii) Rent does not determine price, but price is determined.

Q.7. Give any three classical definitions of the term 'rent'.

Ans. Some of the definitions of rent as given by classical economists are as follows :

1. **Ricardo :** "Rent is that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil."
2. **Thomas :** "Rent may be defined as the income which accrues from the ownership of land and of other free gift of nature."
3. **Marshall :** "The income derived from the ownership of the land and other free gift of nature is commonly called rent."

Q.8. Differentiate between differential rent and scarcity rent.

Ans. The main differences between differential rent and scarcity rent are given as under :

S.No	Differential Rent	Scarcity Rent
1.	It is related to land only.	It is related to all factors of production.
2.	Differential rent arises due to differences in fertility of lands.	Scarcity rent arises due to scarcity of a factor of production.
3.	Differential Rent = Production of more fertile land – Production of less fertile land.	Scarcity Rent = Actual price of a factor – Minimum price necessary to be paid.

Q.9. Discuss the relation between rent and price.

Ans. Following points highlight the relation between rent and price :

(i) **From the Point of View of Economy :** Entire income will be called rent, but rent will not enter price.

(ii) **From the Point of View of Industry :** Earning of land above transfer earing is called rent.

(iii) **From the Point of View of Firm :** Rent enters into price.

Q.10. Write the main features of Ricardian Theory of Rent.

Ans. The main features of Ricardian theory may be put as under :

1. Rent arises on land only.
2. Rent arises on account of differences in the fertility of land.
3. On account of increase in population, demand for corn also increases and it forces to use such marginal lands also which have got no surplus. Thus, the difference of produce of marginal and super-marginal land is called rent.
4. Rent is an unearned income which accrues to the landlord alone.
5. Rent is due both to differential fertility as well as differential situation.

Q.11. Give the various definitions of term 'interest'.

Ans. Following are the main definitions of the term 'interest' :

1. **J. S. Mill :** "Interest is the reward of mere abstinence."
2. **Marshall :** "Interest is the price paid for the use of capital in the market."
3. **Seligman :** "Interest is the reward to be received from capital fund."
4. **Kaut Wicksell :** "Interest is a payment made by the borrower of capital by virtue of its productivity, as a reward for his (capitalist) abstinence."
5. **Alfred Marshall :** "Interest is the price paid for the use of capital in any market."
6. **Keynes :** "Interest is a premium which is offered to wealth holders to induce them to part with their cash."

Q.12. Differentiate between gross interest and net interest.

Ans. The main differences between gross interest and net interest are given as under :

	Gross Interest	Net Interest
1.	It is the real income in the shape of real interest of capital.	It is part of gross interest.
2.	It is a practical rate of interest, found everywhere.	It is simply a theoretical matter and is not found in practice at all.
3.	The rate of gross interest differs depending upon the time, place and other circumstances.	The rate of interest is generally equal at all places.

Q.13. Describe the classical theory of interest.

Ans. The theory of interest as given by classical writers like **Ricardo, Marshall** and **Pigou**, is called the Classical Theory of Interest. Others who subscribe to this theory are Cassels Walras, Taussig and **Knight**. This theory is also known as the 'Time Prefcrence Theory' or 'Saving-Investment Theory of Interest'.

According to the Classical Theory, interest is a reward for 'waiting or saving' and abstaining from present consumption. The interest rate is a price for waiting, and any price is determined

by supply and demand. In this case, supply means the supply of saving, while demand means the demand for investment.

Q.14. Explain Keynes' Liquidity-perference Theory of interest.

Ans. Keynes after rejecting classical theory on the ground noted above expounded his own theory of interest in his epoch-making book, 'The General Theory of Employment, Interest and Money' (1936). According to this theory, which is commonly known Liquidity Preference Theory "interest is the reward for parting with liquidity for a specified period." According to Keynes interest is a monetary phenomenon, in the sense that it is a price paid for the use of money; it is determined by demand for and supply of money.

Q.15. What do you mean by gross profit?

Ans. In economics, gross profit is distinguished from net profit. The surplus which remains after payment to all factors hired contractually and such *current* obligations. like taxes and depreciation charges is the gross profit.

Gross Profit = Total revenue - Explicit cost

Gross profit may also be described as the accounting residual, because it is the residual income that remains after all costs including depreciation have been accounted for.

Q.16. What are normal profits and abnormal profits?

Ans. 1. **Normal Profits :** Normal profits are minimum profits necessary to induce an entrepreneur to remain in industry in the long period.

Normal profits may be called the *translate earnings* of an entrepreneur, which he must earn in his current enterprise to continue in the long period or else he would leave the industry.

Normal profits influence the price of the product; hence, they are included in the cost of production.

2. **Abnormal Profits :** Abnormal profit is also known as *supernormal profit* or *excess profit*. Such excess profit may be earned only when the market is an imperfect one.

Abnormal profits arise due to monopoly position, windfall gains. Therefore, it does not apart of the cost of production and enter into price.

Q.17. Explain the criticisms of the uncertainty-bearing theory of profit.

Ans. The following are some of the criticisms of the uncertainty-bearing theory of profits :

1. According to this theory, profit is the reward for uncertainty-bearing. But sometimes an entrepreneur earns no profit despite uncertainty-bearing. Critics point out that there are other causes of profit in addition to uncertainty-bearing. Other functions like initiating, coordinating and bargaining also fetch profit.
2. Uncertainty-bearing is considered as an independent factor of production in the theory. Uncertainty-hearing cannot be treated as a separate factor of production. If an entrepreneur is able to earn profit in an atmosphere of uncertainty on the basis of business ability, it does not mean that this profit is due to uncertainty-bearing. On the other hand profit is due to his ability.

Q.18. What are the criticisms of marginal productivity theory of profit?

Ans. The marginal productivity theory is not wholly satisfactory. Some of the criticisms are as under :

1. The marginal productivity of entrepreneur for a single firm is difficult to find out.

2. It is one-sided as it pays attention only to the demand side.
3. The theory fails to explain windfall profits.

SECTION-B SHORT ANSWER TYPE QUESTIONS

Q.1. Why do we need a separate theory of resource pricing?

Ans. Following are the reasons why we need a separate theory of resource pricing :

1. **Difference in demand for factors and goods :** The two main differences between the demand for factors and goods are as follows :
   (i) **Derived demand :** The demand for a factor is a derived (or indirect) demand as distinct from direct demand for commodities. The factor is demanded by the producer, because it helps him in the production of a commodity for which there is direct demand from consumers in the market.
   (ii) **Joint demand :** The demand of a factor is that the demand for factors of production is necessarily a joint demand. Two or more factors have to be jointly used with various degrees of substitutability and complementarity among them.
2. **Difference in Supply :** (i) **Estimation of cost of factor :** Supply of a goods closely related to its cost of production. Cost of production of goods can be calculated, but it is not very easy to estimate the cost of factors.
   (ii) **Relation between price and supply :** There is difference also in the relation between the price and supply of factors and the price and supply of goods. With rise in the price of goods, generally their supply also increases. So the supply curve of goods is upward sloping, but there is no definite relation between the supply and price factors.

Q.2. What do you mean by cost of the factor?

Ans.

Cost of the Factor

Cost of the factor refers to the expenditure incurred on hiring or purchasing of the factor. Like cost of the product, cost of the factor also has two aspects :

(a) **Average Factor Cost (AFC) :** Average factor cost may be defined as the per unit cost of the factor. It is estimated as under :

$$AFC = \frac{\text{Total Factor Cost}}{\text{Units of the factor used}}$$

Thus, in the case of labour, AFC will be worked as :

$$AFC = \frac{\text{Total Wage Bill}}{\text{Units of labour employed}}$$

(b) **Marginal Factor Cost (MFC) :** Marginal Factor Cost may be defined as the extra cost of hiring purchasing one more unit of a factor. Thus, MFC is estimated as

$$MFC = TFC_{n+1} - TFC_n$$

Q.3. Explain the assumptions of marginal theory of distribution.

Ans.

Assumptions of the Theory

The marginal productivity theory of distribution is based on the following implicit and explicit assumptions :

1. All units of a factor are perfectly homogeneous, i.e., they are of equal efficiency. This means that all units of a factor will receive the same price. The homogeneity of factor units also implies that they are perfectly substitutable for each other.
2. There is perfect competition, both in the product market as well as in the factor market.
3. The economy, as a whole, is operating at the full employment level.
4. There is perfect mobility of factors of production.
5. The marginal productivity of an individual factor is measurable.
6. The theory essentially considers long run analysis in order to prove that the price of a factor will tend to be equal to both average and marginal productivity.
7. There is no technological change. Hence, the technique of production remains the same, though the scales and proportions of factors may change.
8. The firm is aiming at profit maximisation. Thus, it is seeking the most efficient allocation of resources.

Q.4. Discuss factor pricing as a special case of price theory.

Ans. Factor Pricing as a Special Case of Price Theory

We have seen that the marginal productivity theory of distribution is highly unsatisfactory. It simply tells us how many factor units will an entrepreneur employ at a given factor price in older to maximize his profits. The theory fails to explain the influence of supply of factor units and this does not tell how the factor price is determined.

On the contrary, the modern theory of distribution, i.e., the supply and demand theory of distribution provides a better and more satisfactory explanation of factor pricing than the marginal productivity theory. According to this theory, factor pricing is only a special case of the theory of price. Just as the price of a commodity determined by its demand and supply, in the same manner the price of a factor is also arrived at by the interaction of the forces of demand and supply.

According to **Lipsey and Stonier**, "The theory of factor prices is just a special case of the theory of price. We first develop a theory of the demand for factors, then a theory of the supply of factors and finally combine them into a theory of determination of equilibrium price and quantities."

Q.5. What are the assumptions of modern theory of distribution? Also discuss its critical appraisal.

Ans. Assumptions of Modern Theory of Distribution

The modern theory of distribution is based on certain assumptions. They are as follows :

1. There exists perfect competition in commodity and factor markets.
2. The various units of a factor are homogeneous and perfect substitutes of each other.
3. Each factor is perfectly divisible.
4. The law of variable proportions operates in production.
5. The state does not intervene to equate the price of the factor service.

Critical-Appraisal : Since the modern theory of production includes the forces of both demand and supply of the factor in the determination of factor price and, therefore, it can be

said as an improvement over the marginal productivity theory. It offers a more complete and more satisfactory explanation of the problem of distribution. But the modern theory of factor pricing presents an over-simplified approach to an extremely complicated question. The theory rests upon highly unrealistic assumptions. In the view of the certain economists, the real world is so far from these assumptions that the competitive model is of very limited use.

Q.6. Explain the various kinds of rent.

Ans.

Different Kinds of Rent

Following are the various kinds of rent

1. Contract Rent and Economic Rent

(i) **Contract Rent :** It is the amount paid to the owner of land as per the agreement (contract). The agreement may be verbal or in writing. Contract rent is also known as gross rent. In the gross rent, the share of the factors other than natural factors is included. Suppose, a house has been let out on the annual rent of ₹ 60,000. This payment includes the reward for the services of land as also the reward for the services of these factors. A house is the result of the joint efforts of land, labour, capital and enterprise. The payment of ₹ 60,000 is the gross rent which includes elements other than the pure rent for the services of land.

(ii) **Economic Rent :** If we could deduct the payment for the services of other factors except land, we will arrive at what we can call economic rent or pure rent.

2. Scarcity Differential Rent and Situational Rent

(i) **Scarcity Rent :** Land rent is the price for the use of land. When all land is homogeneous (i.e., of uniform quality) and rent arises on it due to its supply becoming scarce relative to demand for it, this land rent is called scarcity rent.

(ii) **Differential Rent :** When land differs in quality (i.e., in fertility and location) the superior grade land will earn more rent than the inferior grade lands. These different amounts of land rent earned by different pieces of land varying in quality and location are called differential rents.

(iii) **Situational Rent :** Some lands are better situated than others. They may be easily approachable. They may be nearer to the marketing or industrial centres. These types of land will possess advantages over the others. The higher price accruing to land because of its situational advantage is known as situational rent. **David Ricardo**, the propounder of Ricardian Theory of Rent and his theory is based on situational rent.

Q.7. What are the assumptions of Ricardo's Theory of Rent.

Ans.

Assumptions of Ricardo's Theory of Rent

In order to understand Ricardo's theory of rent, we should first understand certain assumptions of the theory, which are enumerated below :

1. **Original and indestructible powers :** Rent is the payment for the original and indestructible powers of the soil.
2. **Long term :** This theory applies in the long term and not in the short term.
3. **Fertility order :** It is assumed that the land is cultivated on fertility order.
4. **Marginal land :** Rent accrues on account of production of marginal land.
5. **Difference in production :** It is assumed that the production on two lands should differ and due to this difference the rent arises.

6. **Rent on land :** Ricardo was of the opinion that rent arises only on land alone.
7. **Law of diminishing returns :** It is assumed that the law of diminishing returns applies to the agriculture.
8. **Increase in population :** It is a tendency of population to increase in geometrical progression. These points will be made clear as we explain the emergence of rent in the Ricardian sense.

Q.8. Differentiate between Ricardian Theory of Rent and Modern Theory of Rent.

Ans.

Comparison/Difference between Ricardian Theory of Rent and Modern Theory of Rent

Basis	Ricardian Theory of Rent	Modern Theory of Rent
Accrual of Rent	Rent is an income that accures of land alone.	It can be part of the income of every factor of production.
Source of Rent	Rent arises because of the difference in the fertility of land.	Rent arises when the supply of a factor becomes less than perfectly elastic.
Origin of Rent	Rent is paid to the landlord for the use of original and indestructible powers of the soil.	It is the difference between actual earning and transfer earnings.
Relationship with Price	Rent does not enter into price rather it is determined by price.	From the point of view of a firm, rent does enter into price.

Q.9. Differentiate between quasi-rent and rent.

Ans.

Difference between Quasi-rent and Rent

Quasi-rent is dissimilar from rent in the following respects :

1. The concept of rent is closely connected with land or free gifts of nature whose supply is perfectly inelastic. As against it, the concept of quasi-rent is connected with man-made appliances and other instruments of production whose supply is temporarily fixed.
2. Ricardian rent is a permanent phenomenon, Marshallian quasi-rent is a temporary phenomenon. Thus, while over the long run rent remains, quasi-rent tends to disappear.
3. Economic rent is payment made to a factor to induce it to remain in a particular industry. Ouasi-rent is not meant for such inducement.
4. To modern economists, economic rent is a part of price while quasi-rent is not a part of cost and it is price determined. In this respect, it is similar to the Ricardian concept of rent.
5. The supply of the factor of production yielding, quasi-rent can ultimately be altered. but the supply of land yielding rent cannot be altered.

Q.10. What is meant by money wages and real wages ?

Ans.

Money Wages and Real Wages

1. **Money or Nominal Wages :** Economists distinguish between money wage and real wage. Money wage is that which is paid in terms of cash for work rendered by labour for a given time (per hour, per day, per week, per month, etc.). Money wages do not give the actual benefit accruing to the labour. In the words of **McConnel**, "Money wages are

simply the amount of money received per hour, per week and so forth." Standard of living of a person cannot be ascertained from his nominal wages alone.

2. **Real Wages :** Real wage is the net total of goods and services or benefit which a worker enjoys while in a particular employment. In other words, real wages are the purchasing power of money wages. Real wages include, besides nominal wage, other benefits and facilities like free medical aid, cheap housing, bonus and so on.

   Real wages of a worker depend on his money wages and the price of goods and services which can be bought with it. It should be remembered that nominal wages and real wages do not move in the same direction. For example, it is possible that money wages may increase but simultaneously real wages may go down, provided prices increase at a faster pace than money wages.

   In the words of **McConnel,** "Real wages are the quantities of goods and services which one can obtain with his money wages, real wages are the purchasing power of money wages." Famous economist, **Adam Smith** distinguished between nominal and real wages by saying that real wages are paid in terms of the quantity of necessaries and comforts to the labourer, while nominal wages are paid in terms of the quantity of money. A labourer is rich or poor in proportion to the real wages obtained by him rather than the nominal wages. Money wage can be converted into real wage by the following formula :

$$\text{Real Wages} = \frac{\text{Money Wage}}{\text{Index of Prices}} \times 100$$

Q.11. What are the criticisms of Wage Fund Theory?

Ans.

Criticisms of Wage Fund Theory

The following are the criticisms of the Wage Fund Theory :

1. The wage fund theory does not explain how the wage fund originated or how the size of the fund is determined in the beginning. It only states a self-evident fact that the wage fund divided by the number of workers yields the normal rate of wage.
2. The theory does not give any attention to the efficiency of labour. It is not necessary that the wage fund should remain fixed during a given time. If the efficiency of labour is high, the production will be more and the 'wage rate will also be high as the size of the wage fund will be bigger'. Difference in relative efficiency of workers will result in variation in the wage rates. The wage fund theory assumes equal wages and fails to take into consideration the difference in efficiency of labour and consequent variations in wage rates.
3. Normal wage rates do not necessarily depend on the available volume of capital in the country as is visualised by the wage fund theory. In practice, it is observed that in new countries where capital accumulation has not made much progress, the wage rates are higher as compared to old countries with sufficient capital assets.
4. The assumption of the theory that the rise in wage rate will reduce the capitalist's profit is also not based on facts. In fact increasing returns and high wage rate will increase the efficiency of workers, which will result in higher volume of production and thus contribute to an increase in both profits and wages.

5. The demand for labour is not determined by the size of wage fund as averred by the wage fund theory. History bears testimoney to the fa.ct in every country where standard of living has improved due to high wage rate, population has tended to decline.

Q.12. Discuss the criticism of Subsistence Theory of Wages.

Ans.

Criticisms of Subsistence Theory of Wages

1. It is difficult to precisely estimate the subsistence level on account of the difference in the wants of the workers, difference in family size, etc.
2. The theory is one-sided because it explains the conditions governing supply of labour while ignoring the demand aspect. The demand for labour is due to productivity, which means that wages should be related to productivity of labour, while the theory does not take this aspect into consideration.
3. The subsistence theory fails to explain the phenomenon of difference in wage rates in different establishments. The theory makes us believe that the wage rate will be uniform in all occupations because the subsistence level will be the same for all. This argument does not conform to reality.
4. The theory is not equitable and just. It is unjust to keep the wage rate to subsistence level. High wages are essential to improve the productivity and efficiency of the working class.
5. The theory fails to take into consideration the role of trade unions in increasing the wage rates.
6. The hypothesis that when the wage rate increases above subsistence level the growth rate of labour force will increase is not born out by facts. High wage rate will lead to increase the standard of living. Workers would prefer to have loss children to maintain a high standard of living.

Q.13. Elaborate gross interest and net interest.

Ans.

Gross Interest

Gross interest is the whole amount that borrower has to pay, while net interest is that portion of the gross interest which is paid simply for the use of capital. Thus, gross interest is the total amount of interest paid by the borrower to the lender. The creditor gets interest because he has got the sense of waiting and the borrower pays him interest because he gets an advantage of productivity from that capital.

Main Constituents of Gross Interest : The following are the main constituents of gross interest :

1. **Net Interest :** It is a payment for the use of capital as such only, or payment for the money borrowed by the person.
2. **Payment for inconvenience :** Some extra charge is made by the creditor known as payment for the inconvenience of the creditor. (i) It may be due to the fact that he may not be made the payment of the debt at the right time. (ii) He may make the payment at such a moment when he may not be able to invest his money in some other business. (iii) In the same way, he may not get his money back at the right time and he may suffer on account of this delay.
3. **Charges for management :** The creditor has to keep a person, an office and some other liabilities to deal with his debtors. There may arise occasions when there is the need of

sending reminders, making personal approaches and legal proceedings against the debtors for recouping the money lent. For this reason, they make an extra charge of interest.

4. **Insurance against risk :** It is guessed that some of the debtors may not be in a position to return the debt taken due to dishonesty or due to the failure of his business. The creditor covers this risk by charging something extra from the debtor. These risks are of two kinds. **(a) Personal risks :** It may arise on account of unrealistic character of the borrower himself : and **(b) Trade risks :** It arises on account of the varying fortune of the business in which the money is invested. The greater this type of risk, the higher will be the insurance money.

Net Interest

The net interest is the price paid for the services of capital employed. Net interest is that part of the gross interest which is paid for the use of capital. The few definitions of net interest may be given as under :

Mill : "Interest is the remuneration of mere abstinence."

Chapman : "Net interest is the payment from that involved saving and no work is entitled on the lender."

Moreland : "Net interest is that portion of the gross interest which is paid simply for the use of capital."

Q.14. Discuss the Classical Theory of Interest. What are the main features of Classical Theory of Interest?

Ans.

Classical Theory of Interest

The theory of interest as given by classical writers like **Ricardo, Marshall** and **Pigou**, is called the Classical Theory of Interest. Others who subscribe to this theory, are **Cassels Walras, Taussig** and **Knight**. This theory is also known as the 'Time Preference Theory' or 'Saving-Investment Theory of Interest'.

According to the Classical Theory, interest is a reward for 'waiting' or saving and abstaining from present consumption. The interest rate is a price for waiting, and any price is determined by supply and demand. In this case, supply means the supply of saving, while demand means the demand for investment.

Characteristics of Classical Theory : The following are the three distinct characteristics of the classical theory of interest :

1. The classical economists called this equilibrium rate the natural rate of interest. The classical theory did not think of the possibility of a divergence between the market rate of interest and the natural rate of interest.
2. The theory states that the equilibrium between savings and investment is achieved only by shifts in the rate of interest. It means that if equilibrium between saving and investment is disturbed by changes in one of the functions, it would be restored or re-established by a change in the rate of interest without any effect on any other variable or without any effect produced by any other variable.
3. The classical theory is purely a flow theory of interest. It means that the variables determining the rate of interest are flow concepts as distinct from stock concepts; they can only be expressed as quantities per unit of time.

Q.15. What are the shortcomings of the loanable fund theory?

Ans. Shortcomings of Loanable Fund Theory

The following shortcomings of the loanable fund theory are noteworthy :

1. **Just a variant of Classical Theory :** It has been pointed out by critics that loanable funds theory of rate of interest is just a variant of the classical theory. Its assumptions are similar to that of the classical theory. Quite needlessly, it has been given the status of a separate theory of rate of interest.
2. **Indeterminate Theory : Prof. Hansen** asserts that the loanable funds theory like the classical and the Keynesian theories of interest is indeterminate. The supply schedule of loanable funds is composed of savings, dishoardings and bank money. But since savings vary with past income and the new money, and activated balances with the current income, it follows that the total supply schedule of loanable funds also varies with income. Therefore, the rate of interest cannot be known unless the level of income is known; and the level of income cannot be known unless the rate of interest is known. Thus, like the classical theory, this theory is also indeterminate.
3. **Unsatisfactory Integration of Monetary and Non-monetary factors :** By combining the real factors of the classical theory with the monetary factors, this theory has made confusion worse confounded. The critics argue, how can real factors, like savings and investment, be combined with monetary factors like bank credit and liquidity preference ?
4. **Dubious Concept of Hoarding :** Loanable funds theory accords a very important role to hoardings and dishoardings but followers of Keynes maintain that the concept of hoarding is all wrong because hoarding simply increase or decrease as long as money remains the same.

Q.16. "Neo-Keynesian Theory of Interest is superior to the other theories." Discuss. Also explain its criticisms.

Ans. Superiority of Neo-Keynesian Theory over other Theories

The neo-Kevnesian theory of interest is a more comprehensive and integrated theory than any other theory of interest.

1. It attempts to provide a determinate theory of interest.
2. It emphasizes more strongly than the other theories (*i.e.*, Keynesian and Loanable funds theories) that the interest rate and income are mutually determined even the four variables.
3. It demonstrates more than the other theories that interest rate has moved out of the domain of micro-economics and entered the province of macro-economic analysis (for it lays stress on the aggregates contained is IS and LM curves and national income).
4. This theory is superior to the Keynesian theory of interest because it explains many policy implication which the Keynesian theory could not explain.

Criticisms of Neo-Keynesian of Interest

The following criticisms have been levelled against this theory :

1. This theory, like the loanable funds theory, creates confusion by mixing up stock and the flow concept (S, I and Y are flow concepts and LP is a stock concept).

2. The LM curve is not easy to draw. It is assumed that the quantity of money is given. Thus, the concept of LM curve is a static concept.
3. The LM curve involves the concept of liquidity preference (LP), Keynes liquidity preference (LP) has been found fault with on various counts. viz., the meaning of LP is not clear; there may be other motives (of LP) than the ones mentioned by keynes; L.P implies savings; and on. The same defects exists in so far as the Hicks. .Hansen's theory makes use of the concept of LP.
4. Like any other theory of interest, this theory does not consider the fact that interest rates may be fixed by the state or by the central bank.
5. The theory fails to explain the different rates of interests, e.g., short-run and the long-run interest rates. It considers one homogeneous rate of interest in the economy.

Q.17. What are the major constituents of gross profit?

Ans. **Constituents of Gross Profit**

Following are the main constituents of gross profit :

1. **Reward of the factors of production supplied by the entrepreneur :** Normally entrepreneur uses factors of production belonging to him. For example, he may supply his own capital or land. The rent interest on these form a part of gross profit. Similarly, entrepreneur may work as manager also and the salary for this work forms a part of cross profit. According to **Samuelson**, "Much of what is ordinarily called profit is nothing but interest, rent and wages under a different name, implicit interest; implicit rent, implicit wages are the names economists give to this part of profit, *i.e.,* to the earnings of self-used factors."
2. **Maintenance Charges :** In every production line fixed assets and equipments like machines and buildings are used. Gross profit includes maintenance cost of these items like depreciation cost and insurance charges.
3. **Personal Profit :** Personal profit is of two kinds : (a) **Monopoly profit :** If output of any commodity is under the sole control of an entrepreneur, he earns extra income which is a part of his gross profit. Monopoly power arises, out of licences, patents, copy right. secret process, ownership all scarce resources and trade combination. Monopolists earn extra income by limiting supply and creating artificial scarcity. According **Samuelson**, monopoly profits are attributable to contrived scarcities (b) **Windfall profits** : Windfall profits are unexpected profits dte to sudden rise in prices which at times occur due to war inflation, etc.
4. **Profit from Innovation : Schumpeter** used the term innovation to mean the introduction of a new product, a new process or a new market. The first innovator gets supernormal which continues till the product, process, or market becomes common to all.
5. **Profit from product differentiation :** When a product is successfully differentiated from other similar products by advertisement or otherwise, it yields additional income which is a part of gross profits.

Q.18. Discuss the Dynamic Theory of Profit.

Ans. **Dynamic Theory of Profit**

J.B. Clark propounded the dynamic theory of profit. He defined profit as the excess of price of commodities overcosts. He was of the view that the entrepreneurs gain profit due to dynamic changes in society or due to the fact that society is dynamic. He classified social circumstances into two states, viz., (i) static state and (ii) dynamic state,

Static state, according to **Clark,** is a state where the element of time is non-existent. In a static state, there is no uncertainty. The following elements do not change in a static state, viz., population, supply of capital, technique of production, industrial organisation and human wants. On the contrary, in a dynamic state the elements shown above are invariably changing.

In a stationary state, the economic activities of the previous year will be repeated in subsequent years without any change. There is, therefore, no risk of any kind for the entrepreneur in a static society. There would be no profit for the entrepreneur. The entrepreneur would get interest on his capital and wages for his labour. If the price of a commodity is higher than the cost of production, competition would soon force it down to the level of cost of production so that there cannot he a gap between cost of production and price.

According to **Clark,** society is not always static. It is changing every minute. Several changes are taking place in a dynamic society such as (a) changes in the size of population, (b) changes in the supply of capital, (c) changes in the technique of production, (d) changes in the forms of industrial organisation, and (e) changes in human wants.

Profit arises in a dynamic state due to these changes. The changes affect mainly the demand and supply of commodities which result in the emergence of profit. These are general dynamic changes. At time firms deliberately introduce dynamic changes. For instance, a firm by improving its technique of production may succeed in cutting down its cost and this increases its profit. In short, profit belongs to economic dynamics and not economic static.

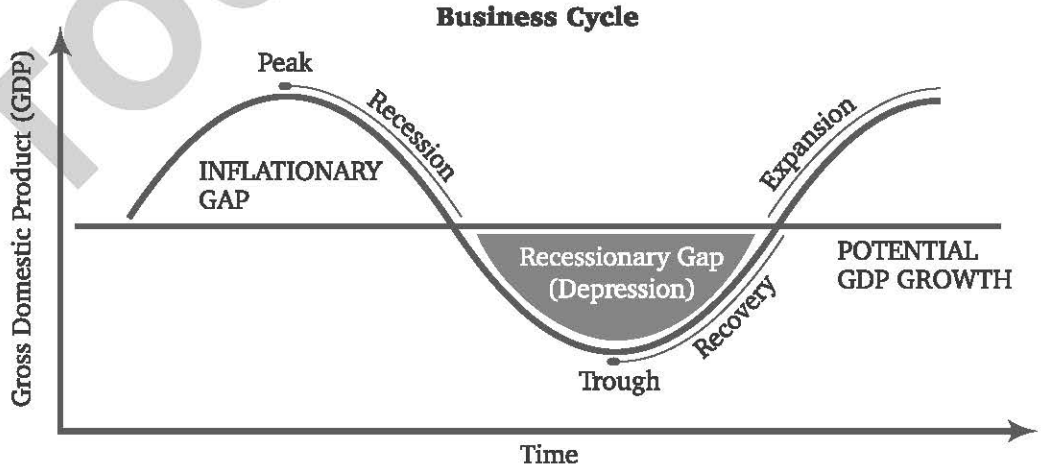
SECTION-C LONG ANSWER TYPE QUESTIONS

Q.1. Explain the various phases of business cycle in detail.

Ans. **Phases of Business Cycle**

The four Phases of Business Cycle are :

1. Expansion, 2. Peak, 3. Contraction, 4. Trough



Let us discuss four phases of business cycle in detail:

1. **Expansion :** Expansion is the first phase of a **business cycle**. It is often referred to as the **growth phase**.

   In the expansion phase, there is an increase in various economic factors, such as production, employment, output, wages, profits, demand and supply of products, and sales. During this phase, the focus of organisations remains on increasing the demand for their products/services in the market.

   The expansion phase is characterised by:

   (i) Increase in demand
   (ii) Growth in income
   (iii) Rise in competition
   (iv) Rise in advertising
   (v) Creation of new policies
   (vi) Development of brand loyalty

   In this phase, debtors are generally in a good financial condition to repay their debts; therefore, creditors lend money at higher interest rates. This leads to an increase in the flow of money.

   In the expansion phase, due to increase in investment opportunities, idle funds of organisations or individuals are utilised for various investment purposes. The expansion phase continues till economic conditions are favourable.

2. **Peak :** Peak is the next phase after expansion. In this phase, a business reaches at the highest level and the profits are stable. Moreover, organisations make plans for further expansion.

   Peak phase is marked by the following features :

   (i) High demand and supply
   (ii) High revenue and market share
   (iii) Reduced advertising
   (iv) Strong brand image

   In the peak phase, the economic factors, such as production, profit, sales, and employment, are higher but do not increase further.

3. **Contraction :** An organisation after being at the peak for a period of time begins to decline and enters the phase of contraction. This phase is also known as a recession. An organisation can be in this phase due to various reasons, such as a change in government policies, rise in the level of competition, unfavourable economic conditions, and labour problems. Due to these problems, the organisation begins to experience a loss of market share.

   The important features of the contraction phase are :

   (i) Reduced demand
   (ii) Loss in sales and revenue
   (iii) Reduced market share
   (iv) Increased competition

4. **Trough :** In Trough phase, an organisation suffers heavy losses and falls at the lowest point. At this stage both profits and demand reduce. The organisation also loses its competitive position.

   The main features of this phase are :

   (i) Lowest income
   (ii) Loss of customers
   (iii) Adoption of measures for cost-cutting and reduction
   (iv) Heavy fall in market share

   In this phase, the growth rate of an economy becomes negative. In addition, in trough phase, there is a rapid decline in national income and expenditure.

Q.2. Elaborate the causes of business cycle.

Ans.

Causes of Business Cycle

Following are the two main causes of business cycle :

1. **Internal Causes :** The factors that are built within the economic system and influence the business cycle, are called the internal causes of the business cycle. The major causes that affect the business cycle are as follows :
   (i) **Change in Demand :** A change in the demand of a good or service will lead to changes in production and supply of the concerned goods and services, thus, affecting output in an economy. This kind of change can also cause inflation in an economy if there is excessive demand. A decrease in demand will lead to lower output, lower employment affecting the income of the public eventually leading to a trough in the economy. If the situation is not resolved, it will lead to depression in the economy.
   (ii) **Investment Fluctuations :** Changes in investments made will lead to differences in output in an economy much like what happens in changes in demand. So it naturally follows that an increase in investment will lead to expansion of the economy while a decrease will lead to trough or depression. There are a few factors affecting the investment decisions: expectation of profits, entrepreneurial and current rate of interests, and income generation.
   (iii) **Macroeconomic Policies :** The monetary and other related policies set up by a government are the macroeconomic policies that immensely affect the business cycle. If the policies benefit businesses and investors, the economy will see an expansion or boom leading to economic growth, whereas, policies that will not benefit such businesses but discourage investment instead such as an increase in tax rates or removing subsidies will create recession in the economy.
   (iv) **Supply of Money :** It is obvious that more supply of money will make people spend more which will, in turn, lead to growth or expansion in the economy and vice-versa. But excessive money in the economy will lead to inflation that will hurt the spending habits of the citizens whose income did not increase at the same rate as inflation.
3. **External Causes :** The factors or changes that arise outside of an economy but still affect it are called external causes of the business cycle. These are exogenous causes that affect economies in other countries as well.

(i) **Wars :** During wars, economic resources and available capital are used for manufacturing weapons and providing for the army which increases the need for basic amenities among the general citizens as the focus shifts to the battlefield and other places of the economy are ignored. This slows down the economy and is one of the main causes of the Great Depression of the 1930s.

(ii) **Technology :** Changes and development of technology is an essential cause of changes in the demands and supply of different goods and services. It is also an influencing factor of employment opportunities and progress in different fields of the economy.

(iii) **Natural Causes :** Natural disasters like drought, famine or flooding greatly affect the several factors of input in the economy such as transportation, employment, agriculture which results in an increase in existing prices of related products. Such natural calamities may cause depression.

(iv) **Population Expansion :** Excessive expansion in population puts pressure on the demands of an economy thereby affecting the supply and prices of products. There is a strict need to control the population through various policies.

Q.3. Analyse the Marginal Productivity Theory from the point of view of a firm.

Ans.

Analysis of the Marginal Productivity Theory from the Point of View of A Firm

Under perfect competition, price of a factor of production, such as wages rate, is determined by the industry on the basis of forces of their composite demand and supply. No single firm can influence the market price of a factor of production. Every firm acts as a price taker and not a price maker. Therefore, it has to accept the prevailing price. No employer would like to pay more than what others are paying.

According to this theory, a firm under perfect competition will employ that number of a factor at which its price becomes equal to its marginal revenue productivity (MRP). From firm's point of view this theory explains how many units of a factor will be demanded. That is why, it is so called **theory of factor demand**.

Other things remaining the same, as more and more labourers are employed by a firm, its marginal physical productivity (MPP) goes on diminishing. As price under perfect competition remains constant, so when marginal physical productivity of labour goes on diminishing, marginal revenue productivity will also go on diminishing. Therefore, in order to get the equilibrium position a firm will employ labourers upto a point where their respective marginal revenue productivity is equal to their wage rate. If the firm employs labourers upto the point where their marginal revenue productivity MRP is less than their wage, the firm will suffer loss. It is explained with the help of the following table and diagram.

Table 1 : Marginal Productivity

No. of Labourers	Marginal Physical Productivity (MPP)	Price (AR = MR) ₹	Marginal Revenue Productivity (MRP)	Market Wage Rate (₹)
1	20	3	20 × 3 = 60	24

2	16	3	16 × 3 = 48	24
3	12	3	12 × 3 = 36	24
4	8	3	8 × 3 = 24	24
5	4	3	4 × 3 = 12	24

It is obvious from the table :

1. The wage rate is ₹ 24 per labour as determined by the forces of market demand and supply and price of the commodity is ₹ 3 per unit.
2. When the firm employs one unit of the factor (labourer) his MRP is ₹ 60. Similarly the MRP of second and third worker is ₹ 48 and ₹ 36 respectively. It means upto 3rd unit of labourer MRP is more than wage rate (₹ 24), hence, firm is earning profit.
3. The MRP of the fourth labour is ₹ 24 which is equal to wage paid to him. The firm, therefore, will employ 4 labourers in order to earn maximum profit.
4. If the firm employs the 5th labourer, it will suffer a loss of ₹ 12 because the MRP of the fifth labourer is ₹ 12, whereas its wage is ₹ 24. It is the prevailing age rate in the market and the firm has got to pay it.

Thus, to earn maximum profit, a firm will employ a factor upto the point where its marginal revenue productivity (MRP) is equal to its price Marginal Factor Cost (here wage rate).

Fig. (a) offers diagrammatic explanation of the theory of marginal productivity from the point of view of the firm. In Fig. (a),

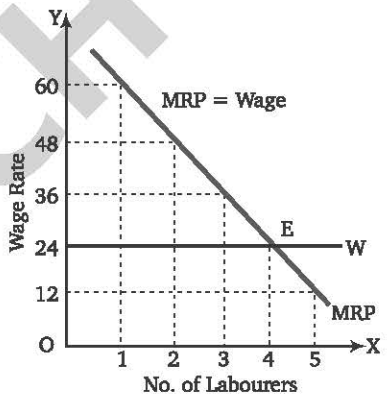


Fig : (a)

1. A number of labourers has been measured on OX-axis and wage rate on Y-axis. MRP is marginal revenue productivity curve and WW is the wage rate prevailing in the market. Since, under perfect competition wage rate will remain constant that is why WW wage line is parallel to OX-axis.
2. MRP curve is sloping downward. It cuts WW at point E which is the equilibrium wage rate of ₹ 24. At point E, firm will demand only four labourers.

   Thus, the basic rate with respect to employment of a factor by a firm may be summed up as follows :

(i) If for a particular factor MRP > wage rate the firm would employ more units of a factor.

(ii) If for a particular factor MRP < wage rate the firm would decrease the employment of the factor.

(iii) The firm is in equilibrium when for a particular factor MRP = MFC. (Wage Rate).

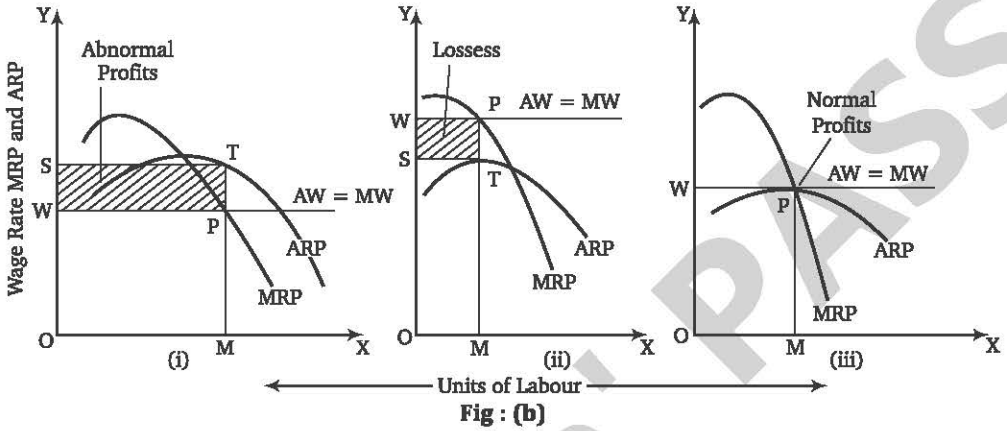


Fig : (b)

Now a very pertinent question arises as to what is the importance of ARP? From the point of view of long period, the concept of ARP is significant. The wage rate, though equal to the MRP, may be more or less or equal to the ARP in the short period.

In Fig. (b) (i), the wage rate, (the equilibrium price of a factor) is PM which is less than the average revenue product TM, and hence there are abnormal profits shown by the area of rectangle SWPT. The equilibrium of this type can exist in the short-run. But it cannot remain stable in the long-run because abnormal profit of existing firms attract new firms in the field and the total demand for a factor tends the rise. The increase in factor demand would cause a rise in factor price and the supernormal profits gets competed away.

In Fig. (b) (ii), the wage rate OW (PM) is equal to the marginal revenue product (MRP) but it is greater than the average revenue product (ARP), *i.e.,* MP < MT, an hence there are abnormal losses as shown by the rectangle SWPT. This situation cannnot remain stable in the long-run, because abnormal losses force some firms out of the field. When some firms quit the total demand for workers decreases. This causes wage rate to fall and it will become equal not only to the marginal revenue product but also revenue product in the long-run.

(b) (iii) represents the situation in which the equilibrium price of a factor is so adjusted that it is exactly equal to firm's ARP. In this situation, firms are getting normal profits. Therefore, no firm has a desire to quit. New firms have no special incentive to enter the field as there is no extra profit. The number of firms is not likely to change even in the long-run. Therefore, this equilibrium which prevails in the short-run can also become stable in the long-run.

From the above discussion, we can conclude that under perfect competition in both markets--factor marked and, product market run : (a) price paid to factor always equals to MRP of a factor and (b) in the long-run it also tends to equal the ARP of factor.

Q.4. On which grounds is Marginal Productivity Theory criticised?

Ans. Criticisms of Marginal Productivity Theory

The marginal productivity theory is criticised on the following grounds :

1. **Unrealistic assumptions :** The marginal productivity theory makes a number of unrealistic assumptions. For example, the following assumptions are made about the theory of **J. B. Clark** :
   (i) Perfect knowledge
   (ii) Equal bargaining power of buyers and sellers
   (iii) A stationary state
   (iv) Perfect competition both in the factor and product markets
   (v) Perfect mobility of factors of production

   All these assumptions are unrealistic and conspicuous by their absence in the real world.
2. **Heterogeneity among units of a factor :** It is based on the assumption that all units of a single input are perfectly homogeneous. But in reality land, labour an entreprenurial talents are heterogeneous, as they differ widely in their productivity, and efficiency. The difference in the productivity gives rise to differential rents which has been ignored by the marginal productivity theory.
3. **Impossibility of variation :** If the technical coefficients of production are unchangeable then a change in the proportion of factors of production will not be, possible. **Hobson** has clarified that most industries the factors of production are used in a fixed proportion. For example, only one typist will be required for a typewriter. We cannot put two persons on one typewriter or one person on two typewriters. In such a situation we cannot find out the marginal productivity of a factor of production.
4. **Significance of the short period is ignored :** This theory states that the rewards for different factors tend to be equal to their marginal productivities in long-run. So, it has no validity for the short-run. With the advent and popularity of Keynesian short-run economics, this theory has been relegated into the background.
5. **One sided theory :** The theory is one-sided. It considers only the demand for the factor in terms of its MRP, but it fails to analyse the conditions of factor supply and other allied issues.
6. **Normative complications :** The theory only tells us how the rewards of the various factors are determined, it does not say whether the reward so fixed is just and equitable. The theory is positive and not normative. **Fraser** has in this connection stated : "No economist would claim that the theory is as yet complete, even as a purely academic structure of framework. It has the defects of its qualities. Being simple and self-consistent it is abstract and impersonal. It is guilty of sins both of omission and commission, its postulates are unduly rigid and narrow."
7. **Difficulty in measurement of marginal net product under increasing returns : Joan Robinson** argued that when there are economies of large scale in the industry, the marginal physical productivity of labour to a competitive industry will be greater than to the individual firm. This is because when an additional man is employed in a firm, the efficiency of others will increase. Thus, under increasing returns the marginal

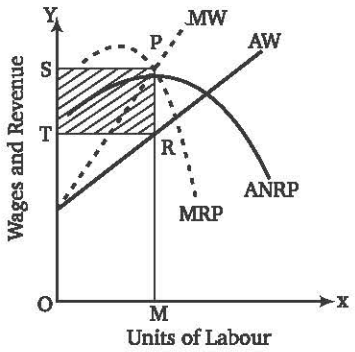
productivity of labour of the individual firm is less than to that of industry as a whole. If the firm pays factors according to their marginal productivity to the industry it will experience losses. If each firm pays according to its marginal productivity to the industry it will different firms pay different prices. Therefore, in such industries the marginal productivity of a factor is indeterminate.

This can be explained with the help of the following table :

Units of labour	Marginal Revenue Productivity (In Rupees)
5	10
6	12
7	15
8	20

In the above example, the MRP of the 8th labourer is ₹ 20, therefore, all other labourers must get wages equal to ₹ 20. But if the 5th labour whose marginal productivity is only ₹10 is paid wages equal to ₹ 20, then the producer shall have to incur a loss of ₹ 10.

8. **Production is not the result of only the factor :** Another criticism put for by **Taussig, Davenport** and **Adriance** is that production of a commodity cannot be attributed to any one factor, land, labour or capital. Rather it is always the result of factors and their units working together. It is, therefore, not possible to calculate the marginal productivity of each factor unit separately.
9. **Full Employment not possible :** It is hard to believe that full employment always existed in the economy. It is true that under conditions of full employment, no worker will offer himself for any remuneration less than the value of his marginal productivity. But large scale unemployment in developing economies comes in the way of a worker to earn as much as its marginal revenue productivity. So if an economy works below the level of full employment, workers accept low wages without bothering about their contribution to productivity.
10. **Perfect competition is a myth :** Marginal productivity theory is based upon the unrealistic assumption of perfect competition. Perfect competition is a myth and hence the application of the theory too in the economic world is a myth. Under imperfect competition, the producer can succeed in paying factors of production a remuneration which is lower than their marginal productivity. This is what is known as exploitation of factors. This can be explained by means of a figure.



In given figure a firm's equilibrium is attained at point P where the MRP equals the MW. In the equilibrium position, the labourers get average wages equal to RM, while their average net revenue productivity is PM. The producer exploits the labourers to the extent of SPRT represented by the shaded area. Thus, the theory does not work under the conditions of monopolistic competition.

Q.5. Explain the various factors affecting the demand for a factor.

Ans.

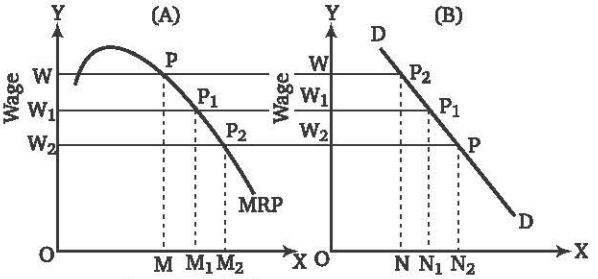
Factors Affecting the Demand for a Factor

Demand for a factor is generally affected by the following factors :

1. **Demand for the produced goods :** Since the demand for factor is a derived demand, hence its demand will depend on the demand for goods that it helps to produce.
2. **Elasticity of Demand for the final product :** Since the factor of production is demanded only because it makes something which is demanded the demand for the factor itself will depend upon the elasticity of demand for the goods produced by it. If the demand for the goods it produces is inelastic or less elastic, its own demand will also be inelastic or less elastic and vice versa.
3. **Prices of the factors :** The demand for a factor depends upon its price. We have seen factor services are demanded by the producers who pay these factors for their services. The expenses incurred on these factors of commodity. Higher price of a factor will mean that the producers demand lesser units of a factor and at lower price more units of a factor are demanded.
4. **Productivity of the factor :** The demand for a factor is greatly influenced by its productivity. It is the marginal productivity of a factor, which will determine its demand in the market. This is why, it is generally assumed that the marginal revenue product of a factor acts as its demand curve also.

After analysing the various factors governing the demand for the various factors of production, let us now discuss the nature of demand curve for an industry for a given factor of production. The demand curve of an industry is merely a sum total of the individual demand curves of various firms constituting that industry.

The demand of the firm for a factor depends on its marginal revenue productivity (or marginal productivity) and the quantity of the factor that a firm will employ will depend on the prevailing factor price. It means that more units of a factor will be employed if factor prices are low and less will be employed if factor prices are high. Given figure illustrates the demand for a factor. When the factor price is OW, the firm is in equilibrium at point P where it demands OM units of the factor of production.



Fig

If factor price is OW_1 its equilibrium point will be P_1 where it demands OM_1 units of the factor input. Similarly, at OW_2 factor price, the demand would be OM_2 units. The MRP (marginal revenue productivity) will be the demand curve for a factor of production by an individual firm. But for determining the price of a factor, we require the total demand of the market. The

total demand of the market is the sum total of the demands of all the firms in the market. This can be derived by summing the MRP curves of all the firms. In panel (B) of figure 6 DD is the market demand curve. It can be seen that in both the panels (A) and (B), Y-axis measure the same scale while X-axis are drawn on different scales. We may assume that there are thousands of firms in the market. At OW factor price, the demand for the individual firm is OM units but the demand of the entire market at the same factor price OW is equal to ON. In the same way, we may find out the market demand for the factor at different prices.

Figure (B) reveals that industry's demand curve for the factor slopes downward to the right. Industry's demand curve for the factor slopes downward since the MRP curves of the constituent firms whose lateral summation is done to obtain industry's demand curve which slopes downward. Hence, we notice a similarity between the demand for consumer goods and that for factors of production. Just as the demand curve for the factors of production slopes downward to the right in the same way the demand curve for consumer goods also slopes downward to the right.

Q.6. On which grounds is the Ricardian Theory criticised?

Ans.

Criticisms of the Ricardian Theory

The Ricardian theory of rent has been severely criticised primarily on the basis of its unrealistic assumptions.

1. **There are no original and indestructible powers of the soil :** It is assumed that rent is a payment for the use of the 'original and indestructible powers of the soil.' It has been argued that there is no such thing like original and indestructible powers of land, and that in so far as certain elements of fertility are concerned the power of land is liable to be destroyed. In these days of atomic energy it is difficult to assert anything as indestructible. Even the fertility of the land can be improved by adopting better farming methods or reduced by not using appropriate techniques of production. Thus, the notion of the original and indestructible powers of the soil is vague.
2. **The best land is not cultivated first :** The historical sequence assumed by Ricardo may not take place. Lands cultivated first are not necessarily superior lands but rather easily accessible lands. **Prof. Walker** replied to this criticism by saying that by the best land **Ricardo** meant not the most fertile land but that which was the best from the point of view of fertility and situation.
3. **Scarcity and not fertility is the cause of rent :** According to **Ricardo**, rent arises on account of the fact that some lands are superior and others inferior. Modern writers point out that this is no cause of rent. Rent will arise even if all lands are A grade. Rent arises because the produce of land is scarce in relation to its demand.
4. **No marginal land in practice :** Ricardian theory assumes the existence of a marginal or no-rent land which can be used as a *datum* to measure the differential land from the above marginal lands. But according to modern theorists, any land including marginal land, can fetch rent, if it is in demand.
5. **No need for a separate theory of rent :** Modern economists assert that there is no need for a separate theory of rent only as such. Any factor of production land, capital, labour or organisation—may command rent if its supply is fixed and is less than its demand.

6. **Rent is not price-determined :** According to **Ricardo,** rent does not enter into the cost of production of the marginal or no-rent land, but the cost of production of the marginal land determines price. The conclusion therefore, is that rent does not enter into price, or that rent does not determine price. On the contrary, rent is determined by price. In the modern view, rent enters price. Land is a factor of production, so its price, i.e., rent becomes a part of the cost of production. Thus, when price is based on the cost of production, rent does affect price.
7. **Imaginary and unrealistic : Ricardo** had visualised that there is a perfect competition between the landlords and the farmers, which however, is never found in actual life. The theory is also unrealistic on the ground that it deals only with the long period, whereas we are more interested in the short period determination of rent.
8. **Other Criticisms :** (i) **Definition of Land :** In the theory, the land has been defined in a narrow sense. Land is a natural gift of nature. The modern definition of rent is based on this broad definition. (ii) **Changing fertility :** Fertility is not a fixed factor and it is always changeable. Fertility of a land can be increased by applying the doses of labour and capital and vice versa. (iii) **Equal Fertility Land :** This theory will not apply if all the lands are of equal fertility. (iv) **Increasing returns :** Ricardian theory of rent will not apply if the law of increasing returns applies to agriculture. In such cases, law of margin fails also. (v) **Political basis :** Now-a-days rent is decided on political grounds, because rent is levied by the government and a few plots are exempted from rent also.

Q.7. Elaborate the Modern Theory of Rent or Demand and Supply Theory of Rent.

Ans.

Modern Theory of Rent or Demand and Supply Theory of Rent

The credit for reconstructing the theory of rent on modern lines goes to economists like **Marshall, Joan Robinson** and **Boulding.** Modern economists have tried to modify and amplify the Ricardian theory of rent. The gist of their views on the theory of rent lies on the following propositions :

(a) Rent arises due to scarcity of land.

(b) Rent is a generalised surplus — earned by all factors.

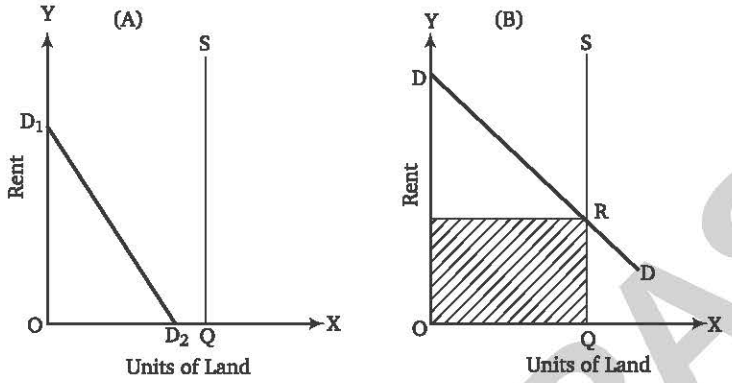
(c) Rent as a surplus, earned by a factor, is measured with reference to transfer earnings of the factor in its prevailing employment.

1. **Scarcity Rent :** In the Ricardian analysis, rent is differential surplus enjoyed by superior lands over inferior lands. According to modern theorists, rent arises because of the inelasticity of the supply of land, and therefore it can be earned by any factor of production. In other words, it is explained by the interaction of demand and supply of land.

   Let us assume that all land is equally fertile and there is no locational or other advantage, *i.e.,* all land is homogeneous. If the demand for land is less than its total supply, there would be no rent.

   In Fig. (A), D_1 D_2 is a demand curve for land. If the entire land is to be given for cultivation, there will be no rent. Fig. (B) shows increase in demand for land, say, due to increase in population. Since the supply of land cannot be increased, the farmers intending to cultivate will be ready to pay rent and thus rent will arise. Shaded area in

Fig. (B) shows the total amount of rent. Thus, it is due to scarcity of land that the rent element arises.



We have assumed above that land is of one quality. If the land is of different qualities, then each quality will have a separate demand curve. Different qualities will then command different rents. The modern theory, thus, explains differential rent too. **Marshall**, therefore, states that "in a sense, all rents are scarcity rents, and all rents are differential rents."

In conclusion, we can say that according to the modern theory, the rent of land, like the remuneration of other factors of production is determined by its demand and supply.

2. **Rent : Generalised Surplus :** Though **Ricardo** associates the term rent with land, modern economists have extended the concept of rent to cover the other factors of production as well. According to them, any factor of production will yield rent if its supply is inelastic in relation to its demand. Land alone is not inelastic in supply; other factors may also be inelastic in supply. The only difference is that while in the case of land this inelasticity of supply is permanent, in the case of other factors it is temporary.

   Like the Ricardian theory, the modern theory also considers rent as a surplus. According to **Mrs. Robinson**, rent is a surplus over the minimum supply price of the factor in question. The minimum supply price is the price below which that factor will not be willing to offer its services. In other words, the minimum supply price represents the minimum reward which the factor has to be given to induce it to be at work. But in real life owing to its scarcity, a factor can get a reward which is above its minimum supply price. This surplus represents the rent of the factor.

   In short, economic rent, when defined as a surplus earning of a factor in excess of its supply price or the minimum necessary payment to attract it into a particular use, becomes a generalised surplus. That is, every factor of production, whether it belongs to the category of land or not earns rent. The amount of rent earned, however, depends on the relative degree of inelasticity of supply of the factor concerned to its demand. The greater the degree of inelasticity of supply, larger the relative surplus accrues to the factor's earning in the form of economic rent.

3. **Measurement of Rent with Reference to Transfer Earnings :** The minimum supply price is also known as 'transfer earnings' or transfer price because if this amount is not paid the factor of production will transfer to other uses. According to the modern

theory of rent, the rent of a factor from the point of view of any industry is the difference between its actual earnings and transfer earnings. In short,

Economic Rent = Actual earnings – Transfer earnings

The actual earnings of a unit refer to the price received by it for selling its services. Its transfer earnings are the minimum price required to keep it in its present use. If it is not paid this minimum price, it will transfer itself to the next most profitable use. Thus, the transfer earnings (alternative or opportunity costs) are the minimum amount of money that a factor can earn in its next most profitable use (or occupation).

For Example, if a film actor is getting ₹ 5 lakhs in film industry and his next best paid alternative use is in sales job. Where he may be paid ₹ 50,000 per month, he will be induced to stay in the film industry as long as he is earning more than ₹ 50,000. In this case, the difference between actual earnings (₹ 2 lakh) and transfer earnings(₹ 50,000) (₹ 50,000) is a surplus which can be called rent. This rent ₹ 2,00,000 – ₹ 50,000 = ₹1,50,000.

Q.8. Explain the concept of quasi-rent.

Ans.

Quasi-Rent

Ricardo formulated the theory of rent as surplus. **Marshall** introduced the concept of quasi-rent which is an extension of the Ricardian theory of factors other than land. Quasi-rent is payment to factors of production (capital goods, for example) which is due to their inelastic supplies in the short run. **Chapman** defines quasi-rent as the periodic earnings of a factor whose supply is fixed in the short-run but is capable of being augmented in the long period. Such a factor must naturally be a man - made factor.

Machines, ships, houses and even human ability like land are fixed in supply but only in the short-run. When the demand for them increases, their supply being fixed, they earn a surplus which is not rent but is like rent as their supply can be increased in the long-run. **Marshall** preferred to call it quasi-rent.

By quasi-rent Marshall meant the income derived from machines and other appliances of production made by man during a short duration when the supply of man-made appliances is inelastic in relation to the demand for them. These temporary high earnings are of the nature of quasi-rent. This concept of quasi-rent can also be explained thus : When the supply of a factor is inelastic in the short as well as long period, its price may be called rent, when the supply of a factor is inelastic in the short period, but elastic in the long period, its price in the short period may be called quasi-rent and in the long period rent.

Modern economists have measured quasi-rent in somewhat different way. According to them, short-run average variable cost (SAVC) is the minimum limit, if price goes below this, the production will be stopped. Hence, the excess of price over this minimum average variable cost will be per unit rent. In this way, the formula for the measurement of quasi-rent will be :

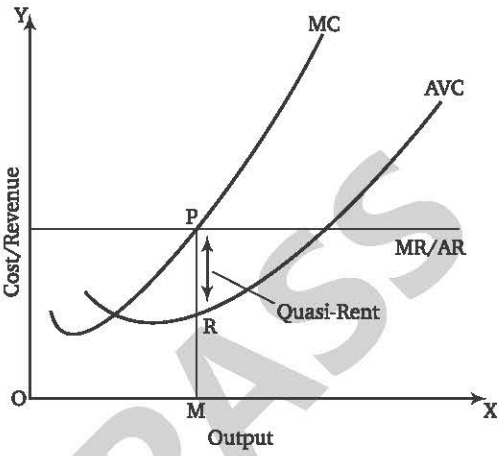
Per unit quasi-rent = Price – Average Variable Cost

Total quasi-rent = Total Revenue – Total Variable Cost

Diagrammatic Presentation of Quasi-rent

The term quasi is further explained with the help of given figure. In the diagram, case of a competitive firm in the short period is assumed.

At the equilibrium point P, MR and AR are equal. At this point OM quantity of goods is supplied at PM price. In the short period, the firm must get RM, the Average Variable Cost (AVC). The goods are sold at the price PM. In this case, the firm is getting additional reward i.e., PR which is PM — RM. The PR amount of earning is termed as quasi-rent.



In modern economic analysis, quasi-rent is also explained in terms of transfer earnings. Transfer earnings are the minimum sum of money which a factor is prepared to accept in the next most profitable use or employment. For example, a clerk might be prepared to work in for ₹ 500 per movie, but due to his good work he is paid ₹ 600. Thus, ₹ 100 is his quasi-rent so long as the the demand for his services continues to be high.

Can Quasi-rent fall below zero ? If price = AVC, then the quasi-rent will be zero. Quasi-rent can never be negative because in case price becomes less than AVC, the firm will stop production.

In short, it follows that : (i) Quasi-rent is a surplus income; (ii) It accrues to fixed factors; (iii) It accrues only in the short-run when their supply cannot vary or is totally inelastic; and (iv) It is eliminated in the long-run when supply can be adjusted, that is supply becomes elastic.

Q.9. Elaborate the various factors determining real wages.

Ans.

Factors Determining Real Wages

The factors determining money wages are as follows :

1. **Level of money wages :** Other things remaining the same, higher the money wage rate, higher will be the real wage. As money wage increases real wage tends to go up.
2. **Purchasing power of money :** If prices are low a person can purchase more goods and services with a given money income, consequently real wage will be high. To find out the real wage, money wage is deflated by the change in price index number. In small towns, prices are generally less than in comparison to big cities. So the purchasing power of money wage is more in small towns.
3. **Extra income :** The real wages of a worker is also influenced by the possibility of supplementing income. (a) A teacher's real wage can be more than his nominal wage if he can earn royalty through writing text-books and articles. (b) A factory hands real wages will be more if his dependents can find job in the same factory. (c) A bearer in a hotel has the opportunity to supplement his wages with the tips which he gets from visitors.
4. **Extra facilities :** In case a worker can get free medical aid, rent free accommodation, free tuition to children, etc., his real wage will be high.
5. **Regularity of employment :** A worker's real wage also depends upon the regularity of his employment. If the employment is regular, it will be having a higher real wage rate than another employment, with higher wages money wage rate but seasonal employment. A hosiery worker in Kolkata has higher wage rate during the season than

a porter. But the porter having regular employment round the year enjoys the same real wage rate as a hosiery worker.

6. **Nature of work :** Some professions have high incidence of risk. A labourer working in a mine runs the risk of accident than an agricultural labour. Even when the miners money wage is higher, the real wage is less.
7. **Conditions of work :** Working conditions like hour of work, holiday with pay, etc., also determine the real wages. If two workers in different industries receive equal money wage but if the working time per day is 5 hours in one industry and in the other industry the working time is 8 hours per day, then the real wage is more in the industry with small duration of work.
8. **Trade or Job expense :** The real wage enjoyed by a worker depends also on the amount of professional expenses. A teacher has to spend on books and journal to keep his knowledge uptodate, while an officer getting an equal salary has no such expenses. To that extent the officer's real wage is higher.
9. **Cost of Professional training :** Doctors, Engineers, Lawyers spend large amount of money on their training and spend a larger number of years. In calculating their real wage the cost of training should be deducted from their money wage.
10. **Good future prospects :** A job having bright prospects of promotion shall be having a higher real wage than another job with the same money wage but with little future prospects.
11. **Social status :** Some jobs have great social status attached to them such as services like I.A.S. and I.P.S. A doctor working in a government hospital may be having the same salary but the I.A.S. officer has a social status which makes his real wage higher than that of the doctor.
12. **Extra work without payment :** If a person has to work over time without payment, then his real wage will be less. For example; if a peon has to work one or two hours in the officer's house in addition to his office work for which he is not paid any extra remuneration then his real wage will be less.

Q.10. Explain the process of wage determination under imperfect competition.

Ans. **Wage Determination under Imperfect Competition**

Empirical studies have showed that perfect competition is rarely found in real life. There can be two forms of market imperfections (a) such labour markets where the employers are very powerful in wage fixation; and (b) such labour markets where labourers have their own unions and try to control wage rate. There are strong employers associations in every trade and industry which try to control wage rate. In certain labour markets, the employers wield superior bargaining position. Most labour markets are characterised by the existence of strong labour unions which control the supply of labour. Wage determination is the outcome of the bargaining between these two organisations. This is a case of monopoly — monopsony or bilateral monopoly.

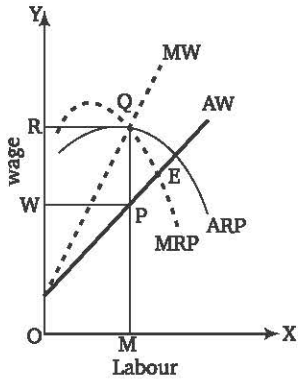
Monopsony labour market is found when —

(a) the number of employers is very few or limited to one;
(b) workers are not mobile as between one trade to another;
(c) workers bargaining strength is weak; and

(d) there is effective competition among the labourers for work but employers have not. to face such competition for getting workers.

In monopsony situation the actual wage fixed may lie between the following two extremes : (a) If there a single employer and the mobility of labour is absent, the wage may be very low;. and (b) If the mobility among labourers is high the labour supply schedule will be elastic. In that case competition among employers will bring the wage rate very close to the purely competitive level of wage rate.

In the second type of imperfect competition, the wage rate is the outcome of bargaining between employers and labour union. Employers try to fix a low level of wages. Few enlightened employers willingly offer higher wages to keep the workers satisfied. The objective of trade union is to raise the wage rate as much as possible. If the employers are financially sound, they can face temporary loss of income due to strike and fix the wage rate very low. On the contrary, a well-knit organised trade union can carry through successfully a strike and secure higher wage rate for the workers. The actual wages will be anywhere between these two extremes. Under imperfect competition, the wage will be less than the marginal revenue product. This is due to the fact that the supply curve of labour for a firm under imperfect competition will be a rising curve. It shows that the firm can get more labourers only if they offer higher wage. The equality of marginal revenue product and marginal labour cost will be possible only at a higher level.



In the given figure, ARP is the average revenue product curve and MRP the marginal revenue product curve. Employers will demand additional labour up to that point where the marginal revenue product by employing additional labour equals the marginal wage by employing an additional labour. The firm will be in equilibrium where MRP = MW. In the figure, these two are equal at E point when MRP cuts MW at this point. The firm will be employing OM labour at OW wage rate at the equilibrium point E. The firm maximises profit at the equilibrium point. When the firm maximises profits, it is getting super normal profits, because average revenue product (ARP) is more than average wage (AW). In the figure, OM is the average revenue product at equilibrium, while average wage is PM which yields surplus OP per labour. The total profits from employing OM labour is OM × OP which shows super normal profits = WPQR.

At equilibrium point E, we can see that average wage is PM (OW) which is less than marginal revenue product EM. It means that the labourers are contributing more to production while the employer is paying less wages and thus labour is being exploited. Payment of wages less than marginal revenue product is designated as exploitation of labour by **Mrs. Joan Robinson.** It is clear from the figure that the rate of exploitation per labour is EM – PM = EP.

Q.11. On which grounds is Classical Theory of Interest criticised?

Ans. Criticisms of Classical Theory of Interest

The classical theory of interest has been criticised on the following grounds :

1. **Unrealistic Assumption of Full Employment :** The classical theory of interest is based upon the unrealistic assumption of full employment. Classical economists assumed that "no resources are in voluntarily unemployment so that increase in the

production of a thing necessarily involves the withdrawal of resources from some employment." But critics have bitterly criticised this assumption. In the words of **Dillard** "Within the framework of a system of theory built on the assumption of full employment, the notion of interest as a reward for waiting or abstinence is highly plausible. It is the premise that resources are typically employed that lacks plausibility in the contemporary world."

2. **Interest is a Monetary Phenomenon :** The classical theory is a pure or real theory of interest which takes into consideration the real factors like the time preference and the marginal productivity of capital. It completely neglects the influence of monetary factors on the determination of the rate of interest.
3. **Equality between Saving and Investment :** According to the classical theory, equality between saving and investment is established through the mechanism of the rate of interest. It is true that saving, investment and rate of interest are related with each other, but the existence of this relationship does not mean that saving and investment are always equated through the rate of interest. The classical economists completely ignored the role of income changes in their analysis. According to **Keynes**, the equilibrium between saving and investment is not made through the variation in the interest rate but through the changes in the levels of income.
4. **Indeterminate Theory : Keynes** has maintained that the classical theory is an indeterminate theory. It involves a circular reasoning as follows :

   $$r = f(S, I)$$

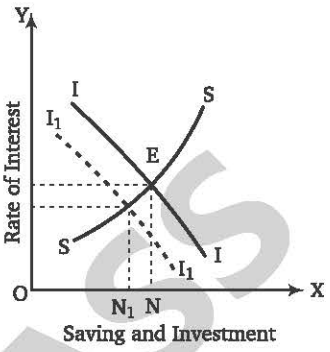
   However,

   $$S = f(r) \text{ ..... (direct function)}$$

   and $$I = f(r) \text{ ..... (inverse function)}$$

   Hence, we cannot know the rate of interest unless we know the saving and investment schedules, which cannot be known unless the rate of interest is known. Thus, the theory fails to offer a determinate solution.
5. **Savings and Investment are not always Interest Elastic :** Further in the classical theory, both investment and saving are shown to be interest-elastic (sensitive to the changes in the rate of interest). However, modern developments have shown that they are not always interest-elastic. In fact, the relationship between the two is rather indirect and weak, if any. Investment depends upon future expectations and the marginal efficiency of capital, as such a high rate of interest in perfectly compatible with high investment. Similarly, savings depend more on the level of income than the rate of interest. In the case of poor people with low incomes, savings are not at all responsive to change in the rate of interest.
6. **Wrong Assumption of the Interdependence of Savings and Investment Schedules :** Classical theory of interest is based upon the assumption that changes in savings leave the investment schedule as unaffected and *vice versa*. But in reality this is not possible. A change in one schedule must bring about a change in other schedule.

For instance, according to classical theory, if investment demand curve II shifts downward to the dotted position I, I_1 (Fig.) because the profit prospects have lessened. Then the new equilibrium of interest is or at which the new investment demand curve I, I, intersects the supply curve SS which remains unaltered. But this is quite untenable. Since supply of savings curve in drawn with a given level of a income, therefore, when the income falls, there will be less savings than before and savings curve will shift to the left. But the classical theory does not take into account changes in the income level as a result of changes in investment and regards the savings schedule as independent of investment. The saving schedule cannot be considered as correct and realistic.



Q.12. On which grounds is the Liquidity Theory of Interest Criticised?

Ans. **Criticisms of Liquidity Theory of Interest**

The following major criticisms have been levelled against the liquidity preference theory of interest :

1. **Ignores the influence of real factors :** It has been pointed out that the rate of interest is not purely a monetary phenomenon. Real forces like productivity of capital and thriftiness also play their part in the determination of rate of interest. Thus, **Keynes** have overlooked these real factors.
2. **Misleading definition of supply of money : Keynes** has not exhaustively explained his definition regarding the supply of money. At one place he has written that the supply of money includes bank deposits as well, but at another time while engaged in an argument with **Robertson**, he has not included bank deposits in the supply of money in his analysis.
3. **No liquidity without saving :** According to **Keynes** interest is a reward for parting with liquidity. It is no compensation or inducement for saving or waiting. But saving is the only source of funds that can be kept liquid. Therefore, unless savings are forthcoming, there cannot be any liquidity.
4. **Contrary to facts :** This theory is contrary to facts as it considers interest as reward for parting with the liquidity. The higher the liquidity preference the higher should be the rate of interest and *vice-versa*, but during depression, despite high liquidity preference, the rate of interest remains at low level. Conversely, in times of inflation, people have a low liquidity preference, yet the rate of interest is very high.
5. **Self-contradictory :** According to **Prof. Hazlitt**, Keynes theory of interest is `self-contradictory'. For if a man is holding his funds in the form of time deposits or short term treasury bills, he is being paid interest on them, therefore, he is getting interest and 'Liquidity' too. What becomes then, or Keynes theory that interest is the reward for parting with liquidity ?
6. **No time element : Keynes** ignoring complex system of interest-rates bases his theory on unified system of liquidity but as we know in actual world, there are different degrees of liquidity giving birth to different degrees of interest-rates. Thus, Keynes completely ignored the time element involved.

7. **Liquidity :** They theory assumes that the choice is always between liquid cash and illiquid bonds but in real world there are various types of investible assets of varying degrees of liquidity. People do not want their saving to be either wholly in cash or illiquid bonds but want to keep some cash, some liquid assets and some illiquid assets. This aspect has been ignored by the liquidity preference theory for determining the rate of interest.
8. **Interest not independent of demand for investment funds : Keynes** assumes that the rate of interest is independent of the demand for investment funds, but it is far from the reality. The cash balances of various persons are significantly influenced by their demand for capital for purposes of investment. The demand for capital being dependent upon the marginal productivity of capital, the rate of interest is not determined independently of the marginal efficiency of capital
9. **Hoarding :** It has been argued that the idea of hoarding has not been properly explained in Keynes' theory of interest. The factors that go to increase the propensity to hoard and the volume of hoarding are not sufficiently analysed and given their due place.
10. **Productivity :** According to critics, interest is not the only reward for parting with liquidity (as claimed by Keynes). The rate of interest also arises because capital is productive. The demand for fund rises not only for speculative motive but also for investment. Hence, the rate of interest is paid because capital is productive.
11. **Advanced Economies :** The theory is applicable primarily in advanced economies, where the money market is well organized and developed so that people can make choice between different types of securities. As such, it does not apply in backward developing economies, where the choice of assets is limited.
12. **Short period :** Keynes' theory explains the determination of the rate of interest in the short period. It does not state how the rate of interest is determined in the long period.

Q.13. Discuss Uncertain Bearing Theory of Profit. Also give its criticisms.

Ans.

Uncertainty-Bearing Theory of Profit

Prof. Knight in his work *Risk, Uncertainty and Profit* (1940) surveyed the then existing theories and framed his own theory. According to **Prof. Knight**, profit is the reward of uncertainty-bearing. Profit accrues to entrepreneur, because he bears uncertainty in business. **Prof. Knight** divided risk into two heads :

1. **Foreseeable risk :** Which entrepreneurs can foresee and provide against such as risk of fire, theft, etc. can be removed by taking out insurance. The premium paid can be included in cost of production.
2. **Unforeseeable risk :** These risks are not foreseeable by the entrepreneur. **Prof. Knight** calls unforeseeable risks as uncertainty-bearing. It is on account of this uncertainty-bearing that profit accrues to entrepreneurs. Uncertainty may be due to (a) uncertainty in market conditions of the product from the consumer side; (b) uncertain behaviour of competitors; (c) technical changes—in machines and equipments; (d) business cycle; (e) risks of government intervention.

Knight explained uninsurable risks thus "The modern economic order is built around the concept of enterprise, the correlate of which income is profit, and is often referred to as the profit system. Economic life necessarily involves much uncertainty or risk, in the loose sense

due to vicissitudes of nature. Not all of this could theoretically be covered by insurance and for much more insurance is impracticable. Enterprise economy adds to this the far greater uncertainty associated with the almost universal production of goods in anticipation of the wishes of consumers."

Uncertainty-bearing as a function of the entrepreneur : Knight emphasised uncertainty-bearing as the main function of the entrepreneur. In a way, he gave uncertainty-bearing the status of a separate factor which has a supply side depending on the degree of uncertainty involved in a venture. Unless uncertainty is rewarded with a certain return, no entrepreneur will come forward to bear the uncertainty involved.

Prof. Knight showed that the presence of uncertainty about future may allow entrepreneurs to earn positive despite product exhaustion and competitive equilibrium. This positive profit may exist even under perfect competition.

Prof. Knight's theory assumes uncertainty as a unique factor giving rise to profit. His theory does not attribute profit simply to dynamic change. Insofar as the changes are foreseen, they cannot generate a difference between selling price and cost. Nor are profits due to risk, for known risk is hedged against by taking out insurance.

Criticisms

The following are some of the criticisms of the uncertainty-bearing theory of profits :

1. According to this theory, profit is the reward for uncertainty-bearing. But sometimes an entrepreneur earns no profit despite uneertainity-bearing. Critics point out that there are other causes of profit in addition to uncertainty-bearing. Other functions like initiating, coordinating and bargaining also fetch profit.
2. Uncertainty-bearing is considered as an independent factor of production in the theory. Uncertainty-bearing cannot be treated as a separate factor of production. If an entrepreneur is able to earn profit in an atmosphere of uncertainty on the basis of business ability, it does not mean that this profit is due to uncertainty-bearing. On the other hand profit is due to his ability.

The uncertainty-bearing theory, like the earlier theories, does not furnish a comprehensive explanation of profit and, therefore, it is inadequate. However, we cannot ignore its importance as a determination of profit.

Q.14. Elaborate Innovation Theory of Profit and its criticisms.

Ans.

Innovation Theory of Profit

Prof. J. A. Schumpeter propounded a dynamic theory of profit in which he attributed profit to the introduction of innovations in the production process or sale of product. According to him, profit is the reward for innovation. He mentioned innovation in a sense wider than **Clark**.

According to **Schumpeter** innovation consists of all those changes in the production process or sales conditions of the product which aims at reducing the cost of production or reducing average revenue from the sale of the product so that the gap between cost and sales price is widened and more profit obtained. Innovation may take any of the following forms :

— Introduction of a new product.
— Improved production technique involving new machine or plant.
— Change in the internal organisation of a firm.
— Use of new sources of raw material.
— Change in the shape and quantity of the product or its sales.

The main motivation of innovation is to earn profit. Profit is, therefore, the cause of innovation. Profit is also the effect of innovation because if an innovation is successful, it will give rise to profit.

Schumpeter said that an idea becomes innovation only when it is put to commercial use. Successful innovation results in the emergence of a position of advantage for the entrepreneur in the industry and gives him profit which is of a temporary nature. Soon competitors emulate it and the surplus vanishes. Meanwhile, the entrepreneur may introduce yet another innovation which gives him again an advantage over the competitors, who in turn try to know it and introduce it. Profit is thus the result of constant striving on the part of the entrepreneur for new methods of productions, organisation or sale. Thus, innovational profits appear, disappear and reappear in a more or less regular sequence.

Like **Clark, Schumpeter** also held that profit was not the reward for risk-taking, because the entrepreneur never took risk in business. The risk was undertaken by the capitalist. The entrepreneur borrowed the money from the capitalist for investment. If the scheme fails, the capitalist will suffer the loss and not the entrepreneur, according to **Schumpeter**.

Criticisms : Schumpeter's theory has been criticised on the following grounds :

1. It is a special case of Knight's theory. Schumpeter's theory is infact nothing else than that the Knight's theory of uncertainty because innovations are one of the causes of uncertainty. However, it is a deliberately created uncertainty.
2. The theory does not provide us with a comprehensive explanation of profits. Undoubtedly innovation causes profits. They are important determinants of profits. But there are several other factors besides innovation which cause profits.
3. Schumpeter's arguments that entrepreneur never undertakes risk, is superficial. An entrepreneur may bear the risk of loss of an unsuccessful innovation. Thus, this theory does not consider profit as the reward for risk taking. But the fact is that it is not capitalist who takes risk but it is the entrepreneur.
4. The theory is a short period one. **Schumpeter** calls economic profit a temporary surplus. In the long period innovation gets reduced to routine, which rules out profit. Thus, there cannot be any profit in the long run. Profit is the main attraction of long period investment. Schumpeter fails to explain the factors determining profit in the long run.
5. The innovation theory is simply an institutional theory. It is not based upon economic factors. It concentrates on the entrepreneurs as an institution. It is, therefore, sociological in nature rather than economic.

Q.15. Explain Rent Theory of Profit. Also discuss its various criticisms.

Ans.

Rent Theory of Profit

The American economist, **Prof. FA. Walker** tried to link profits to rent earnings. According to him, "Rent and profit both belong to the genus of surplus. Both these incomes mathematically are different between income and cost and, therefore, of the nature of surplus."

The main idea underlying the theory had been mooted earlier by economists like **Senior** and **Mill**. According to **J.S. Mill**, "The extra gains which any producer obtains through a superior

talent for business or superior business arrangements are very much of a similar kind." **Walker** felt that profit was the rent of ability. In his view entrepreneurs differ in ability just as the various plots of land differ in their fertility. Entrepreneurs could be graded, like plots of land to be marginal and above marginal. The marginal entrepreneur earns only enough to cover his wages of management, to keep him in the industry. Superior entrepreneurs earn a surplus over and above their costs of production including their wages of management which is supernormal profit. Thus, rent arises as the differential surplus of superior entrepreneur over the marginal or no profit entrepreneur.

Criticisms : The theory has been criticised on the following grounds :

1. Critics point out that profit is not always the reward for business ability. Sometimes it arises due to other factors. For example, profit can be due to monopoly or it can emerge due to favourable circumstances.
2. Critics felt that there cannot be perfect similarity between rent and profit. Rent is normally positive, at times it may zero, but rent can never be negative.
3. There can be no rent land, but the possibility of a no-profit entrepreneur is remote. If an entrepreneur earns no profit, he will prefer to quit the industry.
4. It is wrong to say that profit does not enter into the price of the commodity. In the short period it may be so, but in the long run profit must enter into price.
5. Critics opined that **Walker** has analysed only surplus profit. He did not mention anything about other kinds of profit. Thus, the theory does not offer a comprehensive explanation of profit.
6. The theory does not explain why the shareholders of a joint stock company receive profit from the dividend without showing business ability.
7. **Walker** failed to concieve the real nature of profit. Profit is the reward for avoidance of risk and not the reward for undertaking risk.

The rent theory thus, fails to offer a comprehensive explanation of profit.

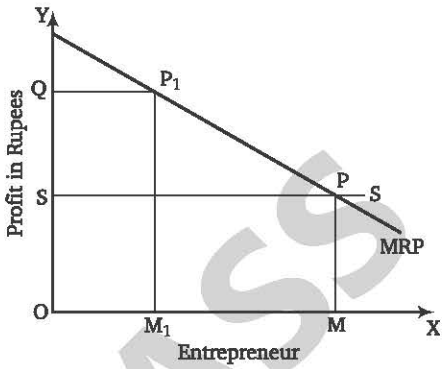
Q.16. Elaborate Marginal Productivity Theory of Profit. On which grounds is it criticized.

Ans.

Marginal Productivity Theory of Profit

According to the marginal productivity theory, profit is the reward for the productivity of entrepreneur and it is determined by the marginal productivity of entrepreneur. The demand curve of any factor is the same as its marginal revenue productivity (MRP) curve. This applies to entrepreneur as well. The MRP cruve of an entrepreneur is also its demand curve. The supply of entrepreneur will depend on how much they can earn in the industry or their marginal productivity. The marginal productivity of entrepreneur for a single firm cannot be calculated as there is only one entrepreneur in a firm. However, it is not so difficult to find out the marginal productivity for an industry. Let us suppose that all entrepreneurs in an industry are homogeneous. We can measure entrepreneurship in homogeneous physical units along the X-axis as shown below :

1. In the given figure, MRP curve shows marginal revenue productivity of entrepreneur to the industry which slopes down to the right. The reason is that as the number of entrepreneurs increases the level of profit per entrepreneur will go down. SS curve indicates the supply of entrepreneur in the industry. Since the level of efficiency is the same, they must earn an equal amount of profit shown by OS in the figure. This profit OS is the transfer earnings of the entrepreneur. If the actual profit falls below OS entrepreneurs will leave the industry. Thus, OS represents the supply price of the entrepreneurs. The shape of supply curve is horizontal which means that since all the entrepreneurs are of the same efficiency their supply price is the same.



We have two curves — the MRP curve and SS curve. These intersect at point P. PM or OS represents the average level of profit in the industry. Under condition of perfect competition this profit will be established in the industry. At OS level of profit, the number of entrepreneur supplied and their demand tends to be equal. However, in the short period the entrepreneur could earn abnormal profits as shown in the diagram. In the short period the number of entrepreneur is OM and profit is OQ. Abnormal profit is to the extent of QS. This will, however, be competed away in the long-run, when attracted by abnormal profit new firms enter the industry. Thus, only normal profit is available to an entrepreneur in the long-run.

Criticisms : The marginal productivity theory is not wholly satisfactory. Some of the criticisms are as under :

1. The theory fails to explain windfall profits.
2. It is one-sided as it pays attention only to the demand side.
3. The marginal productivity of entrepreneur for a single firm is difficult to find out.

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MODEL PAPER

Business Economics

B.Com.-I (SEM-II) [M.M. : 75

Note : Attempt all the sections as per instructions.

Section-A : Very Short Answer Type Questions

Instruction : Attempt all **FIVE** questions. Each question carries **3 Marks**. Very Short Answer is required, not exceeding 75 words.

1. Give any two advantages of business economics.
2. Discuss the relation between Average Cost and Marginal Cost.
3. What do you mean by monopolistic competition?
4. What do you mean by business cycle?
5. What do you mean by gross profit?

Section-B : Short Answer Type Questions

Instruction : Attempt all **TWO** questions out of the following 3 questions. Each question carries **7.5 Marks**. Short Answer is required not exceeding 200 words.

6. Discuss Various advantages of Optimum Theory of Population.

Or Explain the term 'Law of variable proportions'.

7. 'Monopoly is the extreme case of imperfect competition'. Do you agree? Discuss.

Or Discuss factor pricing as a special case of price theory.

8. What is meant by 'Advertising elasticity of demand'? Also discuss its importance.

Or Discuss the Subsistence Theory of Wages.

Section-C : Long Answer Type Questions

Instruction : Attempt all **THREE** questions out of the following 5 questions. Each question carries **15 Marks**. Answer is required in detail, between 500-800 words.

9. Is Optimum theory an improvement over the Malthusian theory? Discuss.

Or Elaborate the long-run production function.

10. What are the major factors affecting the expansion of market?

Or Analyse the Marginal Productivity Theory from the point of view of a firm.

11. Explain the major features of business economics. Also discuss the nature of business economics.

Or What do you mean by production function? Explain in detail.

12. Explain various approaches of price determination under perfect competition.

Or On which grounds is the Ricardian Theory criticised?

13. Compare the Kautilya's Arthashastra with modern economics.

Or What do you mean by oligopoly? Discuss the main features of oligopoly.

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