PRICE DETERMINATION IN DIFFERENT MARKETS

Unit 1

Meaning and Types of Markets

Learning Objectives

At the end of this unit you will be able to :

♦ know the meaning of market in Economics.

♦ know various types of markets.

♦ understand the concepts of total, average and marginal revenue.

♦ understand behavioural principles underlying markets.

1.0 MEANING OF MARKET

Consider the following situation. You go to the local market to buy a pair of shoes. You enter one shop which sells shoes. The shoes which you like are priced at Rs. 600. But you think that they are not worth more than Rs. 500. You offer Rs. 500 for the shoes. But the shopkeeper is not ready to give them at less than Rs. 550. You finally buy the shoes for Rs. 550.

This is an example of a local market. In this market some are buyers and some are sellers. The market fixes the price at which those who want something can obtain it from those who have it to sell.

Note that it is only exchange value which is significant here. The shopkeeper selling the shoes may have felt that the shoes ought to have made more than Rs. 550. Considerations such as 'sentimental value' mean little in the market economy.

Most goods such as foodstuffs, clothing and household utensils etc., are given a definite price by the shopkeeper. But buyers will still influence this price. If it is too high, the market will not be cleared; if it is low, the shopkeeper's stock will run out.

A market need not be formal or held in a particular place. Second-hand cars are often bought and sold through newspaper advertisements. Second-hand furniture may be disposed of by a card in the local shop window.

However, in studying the market economy it is essential to understand how price is determined. Since this is done in the market, we can define the market simply as all those buyers and sellers of a good or service who influence the price.

The elements of a market are :

(i)   buyers and sellers;

(ii) a product or service;

(iii) bargaining for a price;

(iv) knowledge about market conditions; and

(v) one price for a product or service at a given time.

Classification of Market:

In Economics, generally the classification is made on the basis of

a.   Area

b. Time

c. Nature of transaction

d. Regulation

e. Volume of business

f. Types of Competition.

On the basis of Area

On the basis of geographical area covered, markets are classified into

a. **Local Markets**: Generally, markets for perishable like butter, eggs, milk, vegetables, etc., will have local markets. Like wise, bulky articles like bricks, sand, stones, etc., will have local markets as the transport of these over a long distance will be uneconomic.

b. **Regional Markets**: Semi-durable goods command a regional market.

c. **National Markets**: In this market durable goods and industrial items exist

d. **International markets**: The precious commodities like gold, silver etc. are traded in the international market.

On the basis of Time:

Alfred Marshall conceived the 'Time' elements in marketing and this is classified into

a. **Very short period market**: It refers to that type of market in which the commodities are perishable and supply of commodities cannot be changed at all. In a very short-period market, the market supply is almost fixed and it cannot be increased or decreased, because skilled labour, capital and organization are fixed. Commodities like vegetables, flower, fish, eggs, fruits, milk, etc., which are perishable and the supply of which cannot be changed in the very short period come under this category.

b. **Short-period Market**: Short period is a period which is slightly longer than the very short period. In this period, the supply of output will be increased by increasing the employment of variable factors to the given fixed capital equipments.

c. **Long-period Market**: It implies that the time available is adequate for altering the supplies by altering even the fixed factors of production. The supply of commodities may be increased by installing a new plant or machinery and the output adjustments can be made accordingly.

d. **Very long-period or secular period** is one when secular movements are recorded in certain factors over a period of time. The period is very long. The factors include the size of the population, capital supply, supply of raw materials etc.

On the basis of Nature of Transactions

a. **Spot Market**: Spot transactions or spot markets refer to those markets where goods are physically transacted on the spot.

b. **Future Market**: It is related to those transactions which involve contracts of the future date.

On the basis of Regulation:

a.   **Regulated Market**: In this market, transactions are statutorily regulated so as to put an end to unfair practices. Such markets may be established for specific products or a group of products. Eg. stock exchange

b.   **Unregulated Market**: It is also called as free market as there are no restrictions on the transactions.

On the basis of volume of Business

a.   **Wholesale Market**: The wholesale market comes into existence when the commodities are bought and sold in bulk or large quantities.

b.   **Retail Market**: When the commodities are sold in the small quantities, it is called retail market. This is the market for ultimate consumers.

On the basis of Competitions:

Based on the type of competition markets are classified into a. Perfectly competitive market and b. Imperfect market. We shall study these markets in greater details in the following paragraphs.

1.1   TYPES OF MARKET STRUCTURES

For a consumer, a market consists of those firms from which he can buy a well-defined product; for a producer, a market consists of those buyers to whom he can sell a single well-defined product. If a firm knows precisely the demand curve it faces, it would know its potential revenue. If it also knows its costs, it can readily discover the profit that would be associated with different level of output and can choose the rate that maximizes the output. But suppose the firm knows its costs and the market demand curve for the product but does not know its own demand curve. In other words, it does not know its own total sales. In order to find this curve, the firm needs to answer the following questions. How many competitors are there in the market selling similar products? If one firm changes its price, will its market share change? If it reduces its price, will other firms follow it or not? There are so many other related questions which will need answers.

Answers to questions of this type will be different in different circumstances. For example, if there is only one firm in market, the whole of the market demand will be satisfied by this particular firm. But if there are two large firms in the industry they will share the market demand in some proportion. They will have to be very cautious of the reactions of other firm to every decision they make. But if there are say more than 5,000 small firms in an industry, each firm will be less worried about the reactions of other firms to its decisions because each firm sells only a small proportion of the market. Thus, we find that the market behaviour is greatly affected by market structure. We can conceive of more than thousand types of market structures but we focus on a few theoretical market types which mostly cover a high proportion of cases actually found in marketing world. These are :

Perfect Competition : Perfect competition is characterised by many sellers selling identical products to many buyers.

Monopolistic Competition : It differs in only one respect, namely, there are many sellers offering differentiated products to many buyers.

Monopoly : It is a situation of a single seller producing for many buyers. Its product is necessarily extremely differentiated since there are no competing sellers producing near substitute products.

In Oligopoly : There are a few sellers selling competing products for many buyers.

Table 1 summarises the major distinguishing characteristics of these four major market forms.

Table 1 - Distinguishing features of major types of markets

Assumption	Market Types			
	Pure Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of sellers	many	many	a few	one
Product differentiation	none	slight	none to substantial	extreme
Price elasticity of demand of a firm	infinite	large	small	small
Degree of control over price	none	some	some	very considerable

Before discussing each market form in greater detail it is worthwhile to know concepts of total, average and marginal revenues and behavioural principles which apply to all market conditions.

1.2 CONCEPTS OF TOTAL REVENUE, AVERAGE REVENUE AND MARGINAL REVENUE

Total Revenue *:* If a firm sells 100 units for Rs.10 each, what is the amount which it realises? It realises Rs. 1,000 (100 x 10), which is nothing but total revenue for the firm. Thus we may state that total revenue refers to the amount of money which a firm realises by selling certain units of a commodity. Symbolically, total revenue may be expressed as

TR = P x Q

> Where, TR is total revenue
>
> P is price
>
> Q is quantity of a commodity sold.

Average Revenue : Average revenue is the revenue earned per unit of output. It is nothing but price of one unit of output because price is always per unit of a commodity. Symbolically, average revenue is :

$$AR = \frac{TR}{Q}$$

Where   AR is average revenue

TR is the total revenue

Q is quantity of a commodity sold

or $AR = \dfrac{P \times Q}{Q}$

or $AR = P$

If, for example, a firm realises total revenue of Rs. 1,000 by the sale of 100 units. It implies that the average revenue is Rs. 10 (1,000/100) or the firm has sold the commodity at a price of Rs. 10 per unit.

Marginal Revenue : Marginal revenue (MR) is the change in total revenue resulting from the sale of an additional unit of the commodity. Thus, if a seller realises Rs. 1,000 after selling 100 units and Rs. 1,200 after selling 101 units, we say marginal revenue is Rs. 200. We can say that MR is the rate of change in total revenue resulting from the sale of an additional unit.

$MR = \dfrac{\Delta TR}{\Delta Q}$

Where   MR is marginal revenue

TR is total revenue

Q is quantity of a commodity sold

Δ is the rate of change.

For one unit change in output

$MR_n = TR_n - TR_{n-1}$

Where   TR is the total revenue when sales are at the rate of n units per period.

TR_{n-1} is the total revenue when sales are at the rate of n - 1 units per period.

Marginal Revenue, Average Revenue, Total Revenue and Elasticity of Demand : It is to be noted that marginal revenue, average revenue and price elasticity of demand are uniquely related to one another through the formula :

$MR = AR \times \dfrac{e-1}{e}$, Where e = price elasticity of demand

Thus if e = 1, $MR = AR \times \dfrac{1-1}{1} = 0$.

and if e >1,   MR will be positive

and if e <1,   MR will be negative

In a straight line demand curve, we know that the elasticity of the middle point is equal to one. It follows that marginal revenue corresponding to the middle point of the demand curve (or AR curve) will be zero.

1.3 BEHAVIOURAL PRINCIPLES

Principle 1 : A firm should not produce at all if total revenue from its product does not equal or exceed its total variable cost.

It is a matter of common sense that a firm should produce only if it will do better by producing than by not producing. The firm always has the option of not producing anything. If it does not produce anything, it will have an operating loss equal to its fixed cost. Unless actual production adds as much to revenue as it adds to cost, it will increase the loss of the firm.

Principle 2 : It will be profitable for the firm to expand output whenever marginal revenue is greater than marginal cost, and to keep on expanding output until marginal revenue equals marginal cost. Not only marginal cost should be equal to marginal revenue, its curve should cut marginal revenue curve from below.

The above principle states that if any unit of production adds more to revenue than to cost, that unit will increase profits; if it adds more to cost than to revenue, it will decrease profits. Profits will be maximum at the point where additional revenue from a unit equals to its additional cost.

SUMMARY

The term market is a place where buyers and sellers bargain over a commodity for a price. There are many factors which determine the extent of a market like nature of the commodity, size of production, extent of demand and so on.

Markets can be classified on the basis of area, volume of business, time, status of sellers, regulation and competition. On the basis of competition a market is classified into perfect competition, monopoly, imperfect competition and oligopoly.

The firms can operate with a complex set of objectives and under various constraints. However, we assume that firms act as if they are maximizing their profits. With this assumption, we study the behaviour of firms in different types of market structure.

PRICE DETERMINATION IN DIFFERENT MARKETS

Unit 2

Determination of Prices

Learning Objectives

At the end of this unit you will be able to understand :

♦ how prices are generally determined.

♦ how changes in demand and supply affect prices and quantities demanded and supplied.

2.0 INTRODUCTION

Prices of goods express their exchange value. These are also used for expressing the value of various services rendered by different factors of production such as land, labour, capital and organization. These values respectively are, rent, wages, interest and profit. Therefore, the concept of price, especially the process of price determination, is of vital importance in Economics.

It is to be noted that generally it is the interaction between demand and supply that determines the price but sometimes Government intervenes and determines the price either fully or partially. For example, the Government of India fixes up prices of petrol, diesel, kerosene, coal, fertilizers, etc. which are critical inputs. It also fixes up procurement prices of wheat, rice, sugarcane, etc. in order to protect the interests of both producers and consumers. While determining these prices, the Government takes into account factors like cost of inputs, risks for business, nature of the product etc.

2.1 DETERMINATION OF PRICES - A GENERAL VIEW

In an open competitive market it is the interaction between demand and supply that tends to determine price and quantity. This can be shown by bringing together demand and supply. Combining the tables of demand and supply (on page 33 and 66 respectively) of Chapter-2, we have the following schedule :

Table – 2 : Determination of Price

S. No.	Price (Rs.)	Demand Units	Supply (Units)
1	1	60	5
2	2	35	35
3	3	20	45
4	4	15	55
5	5	10	65

When we plot the above points on a single graph with price on Y-axis and quantity demanded and supplied on X-axis, we get a figure like this :
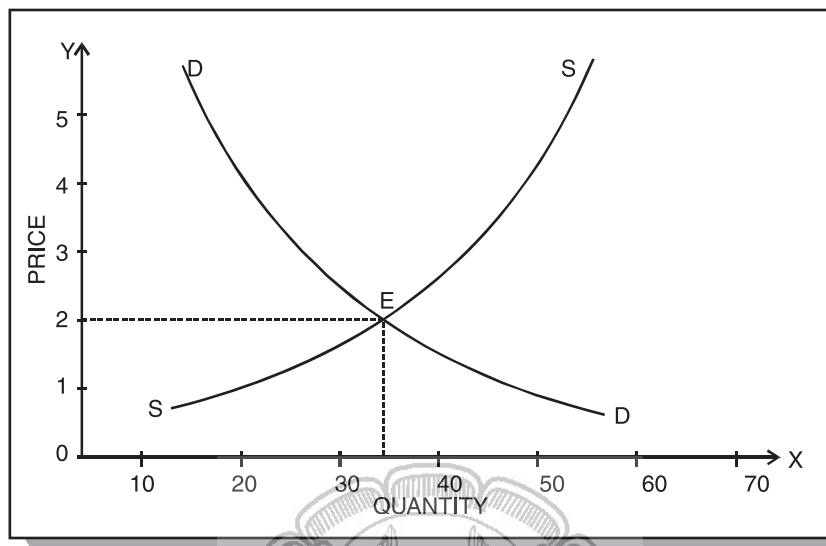
Fig. 1 : Determination of Equilibrium Price

It is easy to see which will be the market price of the article. It cannot be Re. 1, for at that price there would be 60 units in demand, but only 5 units on offer. Competition among buyers would force the price up. On the other hand, it cannot Rs. 5, for at that price there would be 65 units on offer for sale but only 10 units in demand. Competition among sellers would force the price down. At Rs. 2, demand and supply are equal (35 units) and the market price will tend to settle at this figure. This is equilibrium price and quantity – the point at which price and output will tend to stay. Once this point is reached we will have stable equilibrium. It should be noted that it would be stable only if other things were equal.

2.2 CHANGES IN DEMAND AND SUPPLY

The facts of real world, however, are such that other things (like income, tastes and preferences, population, etc.) always change causing changes in the demand and supply. The four main changes in demand and supply are :

(i)   An increase (shift to the right) in demand;

(ii)   A decrease (shift to the left) in demand;

(iii) An increase (shift to the right) in supply;

(iv) A decrease (shift to the left) in supply.

We will consider each of the above changes one by one.

(i)   *An increase in demand :* In figure 2, the original demand curve is DD and supply curve is SS. At equilibrium price OP, demand and supply are equal to OQ.

Now suppose the money income of the consumer increases, the demand curve will shift to D_1D_1 and the supply curve will remain same. We will see that on the new demand curve D_1D_1 at OP price demand increases to OQ_2 while supply remains the same i.e. OQ. Since supply is short of the demand, price will go up to OP_1. With the higher price supply will also shoot up and new equilibrium between the demand and supply will be reached. At this equilibrium point, OP_1 is price and OQ_1 is the quantity which is demanded and supplied.
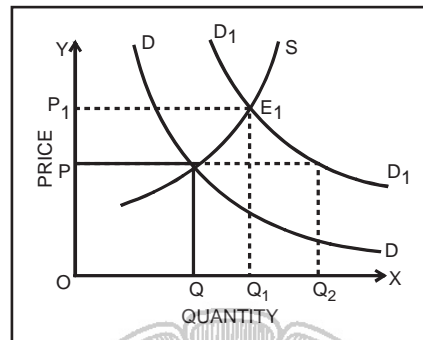
Fig. 2 : Increase in Demand, causing an increase in equilibrium price and quantity

Thus, we see that as a result of an increase in demand, there is an increase in equilibrium price, as a result of which the quantity sold and purchased also increases.

(ii) *Decrease in Demand :* Opposite will happen when the demand falls as a result of a fall in income, while the supply remaining the same. The demand curve will shift to the left and become D_1D_1 while the supply curve remaining as it is. With the new demand curve D_1D_1 at original price OP, OQ_2 is demanded and OQ is supplied. As the supply exceeds demand, price will go down and quantity demanded will go up. A new equilibrium price OP_1 will be settled in the market where demand OQ_1 will be equal to supply OQ_1.
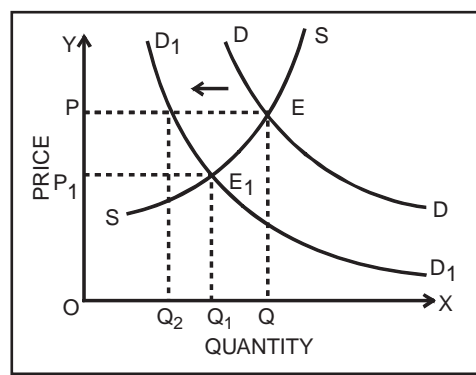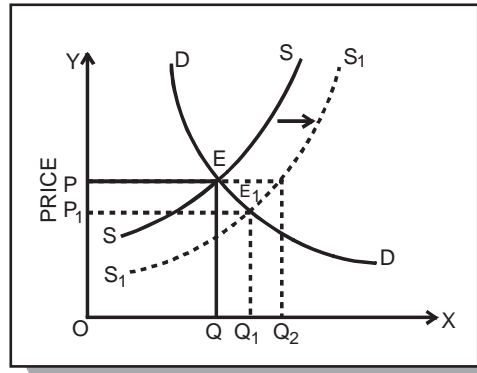

Fig. 3 : Decrease in Demand resulting in a decrease in price and quantity demanded

Thus with a decrease in demand, there is a decrease in the equilibrium price and quantity demanded and supplied.

(iii) *Increase in Supply :* Let us now assume that demand does not change, but there is an increase in supply say, because of improved technology.


Fig. 4 : Increase in supply, resulting in decrease in equilibrium price and increase in quantity supplied

The supply curve SS will shift to the right and become S_1S_1. At the original equilibrium price OP, OQ is demanded and OQ_2 is supplied (with new supply curve). Since the supply is greater than the demand, the equilibrium price will go down and become OP_1 at which OQ_1 will be demanded and supplied.

Thus, as a result of an increase in supply the equilibrium price will go down and the quantity demanded will go up.

(iv) *Decrease in Supply :* If because of some reason, there is a decrease in the supply we will find that equilibrium price will go up but the amount sold and purchased will go down as shown in figure 5 :
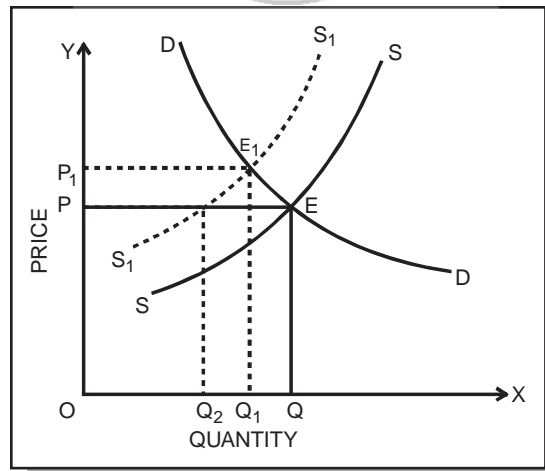

Fig. 5 : Decrease in supply causing an increase in the equilibrium price and a fall in quantity demanded

2.3 SIMULTANEOUS CHANGES IN DEMAND AND SUPPLY

Till now, we were considering the effect of change either in demand or in supply on the equilibrium price and the quantity sold and purchased. There may be cases in which both the supply and demand change at the same time. During a war, for example, shortage of goods will often decrease supply while full employment causes high total wage payments which increase demand.

We may discuss the changes in both demand and supply with the help of diagrams as follows :
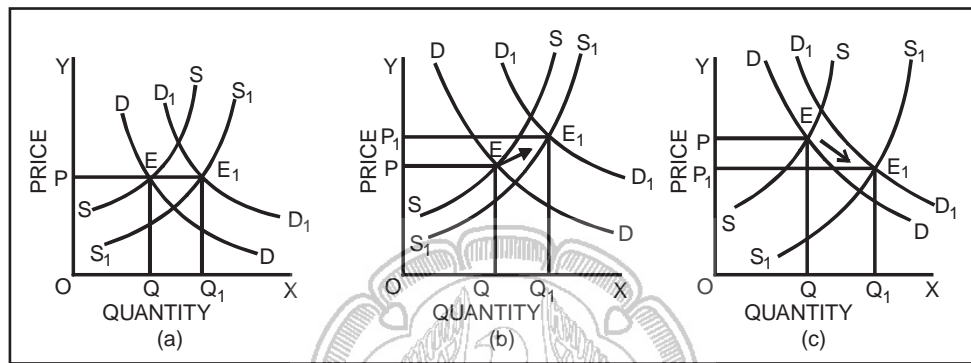
Fig.6 : Simultaneous Change in Demand and Supply

Fig. 6 shows simultaneous change in demand and supply and its effects on the equilibrium price. In the figure, the original demand curve DD and the supply curve SS meet at E at which OP is the equilibrium price OQ is the quantity bought and sold.

Fig. 6 (a), shows that increase in demand is equal to increase in supply. The new demand curve D_1D_1 and S_1S_1 meet at E_1. The new equilibrium price is equal to the old equilibrium price (OP).

Fig. 6 (b), shows that increase in demand is more than increase in supply. Hence, the new equilibrium price OP_1 is higher than the old equilibrium price OP. Opposite will happen i.e. the equilibrium price will go down if there is a simultaneous fall in the demand and supply and the fall in demand is more than the fall in supply.

Fig. 6 (c), shows that supply increases in a greater proportion than demand. The new equilibrium price will be less than the original equilibrium price. Conversely, if the fall in the supply is more than proportionate to the fall in the demand, the equilibrium price will go up.

SUMMARY

The price of a product depends upon (i) its demand and (ii) its supply. Demand for a product in turn depends upon utility it provides to consumers and the supply on the cost of producing it. Equilibrium price is determined at a point where demand is equal to supply. Here, all other things are supposed to be equal.

However, we seldom get a stable equilibrium. Conditions underlying demand and supply keep on changing and the demand and supply curves keep on shifting giving rise to a new equilibrium price. Supply remaining same, if demand increases, equilibrium price will move up and if demand decreases, the equilibrium price will move down. Demand remaining same, if the supply increases the equilibrium price will decline and vice-versa.

There can be simultaneous change in both demand and supply and the equilibrium price will change according to the proportionate change in demand and supply.

CHAPTER – 4

PRICE DETERMINATION IN DIFFERENT MARKETS

Unit 3

Price-output Determination Under Different Market Forms

Learning Objectives

At the end of this unit you will be able to :

♦ understand how price and quantity demanded and supplied are determined in perfect competition, monopoly, oligopoly and monopolistic competition.

♦ understand the conditions required to make price discrimination by monopolist successful.

♦ understand how firms in an oligopolist market are independent.

In this unit, we shall study the determination of price and output under perfect competition, monopoly, monopolistic competition and oligopoly. Output is supplied by individual firms on the basis of market demand, their cost and revenue functions. However, the existence of different forms of market structure leads to differences in demand and revenue functions of the firms. Therefore, supplies offered at different prices by the firm would vary significantly depending upon the market forms. We start our analysis with perfect competition.

3.0 PERFECT COMPETITION

3.0.0 Features

Suppose you go to a vegetable market and enquire about the price of potatoes from a shopkeeper. He says potatoes are for Rs. 5 per kg. In the same way, you enquire from many shopkeepers and you get the same answer. What do you notice? You notice the following facts :

(i) There are large number of buyers and sellers in the potatoes market.

(ii) All the shopkeepers are selling potatoes for Rs. 5.

(iii) Product homogeneity i.e. all the sellers are selling almost same quality of potatoes in the sense that you cannot judge by seeing the potatoes from which farmer's field do they come from.

Such type of market is known as perfectly competitive market. In general it has the following characteristics :

(i) There are a large number of buyers and sellers who compete among themselves and their number is so large that no buyer or seller is in a position to influence the demand or supply in the market.

(ii) The commodity dealt in it is homogeneous in the sense that the goods produced by different firms are identical in nature.

(iii) Every firm is free to enter the market or to go out of it.

If the above three conditions alone are fulfilled, then it is called pure competition. The essential feature of the pure competition is the absence of monopolistic element. The number of producers is large, the commodity is the same and everyone has the liberty to enter the industry. So, monopolistic combinations are not possible.

In addition to the above stated three features of pure competition, some more conditions are attached to the perfect competition. They are:

(iv) There is a perfect knowledge, on the part of buyers and sellers, of the quantities of stock of goods in the market, market conditions and the prices at which transactions of purchase and sale are being entered into.

(v) Facilities exist for the movement of goods from one centre to another. Also buyers have no preference as between different sellers and as between different units of commodity offered for sale; also sellers are quite indifferent as to whom they sell.

(vi) The commodity or the goods are dealt on at a uniform price throughout the market at a given point of time. In other words, all firms individually are price takers, they have to accept the price determined by the market forces to total demand and total supply.

The last mentioned is a consequence of the conditions prevailing in a market operating under conditions of perfect competition, for when there is perfect knowledge and perfect mobility, if any seller tries to raise his price above that charged by others, he would lose his customers.

While there are few examples of perfect competition, which is regarded as a myth by many, the grain or stock markets approach the condition of perfect competition.

3.0.1   Price determination under perfect competition

Equilibrium of the Industry : An industry in economic terminology consists of a large number of independent firms, each having a number of factories, farms or mines under its control. Each such unit in the industry produces a homogeneous product so that there is competition amongst goods produced by different units called firms. When the total output of the industry is equal to the total demand we say that the industry is in equilibrium; the price then prevailing is equilibrium price, whereas a firm is said to be in equilibrium when it has no incentive to expand or contract production.

As stated above under competitive conditions, the equilibrium price for a given product is determined by the interaction of forces of demand and supply for it as is shown in figure 7.
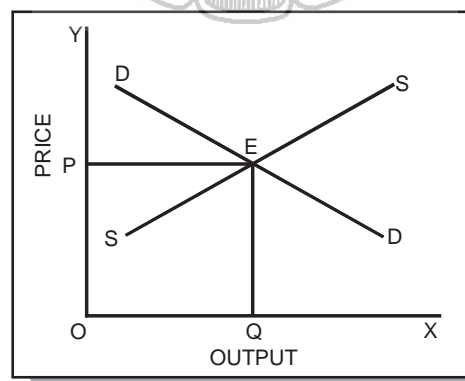
Fig.7 : Equilibrium of a competitive industry

In Fig. 7, OP is the equilibrium price and OQ is the equilibrium quantity which will be sold at that price. The equilibrium price is the price at which both the demand and supply are equal at which no buyer goes dissatisfied who wanted to buy at that price and none of the sellers is dissatisfied that he could not sell his goods at that price. It will be noticed that if price were to be fixed at any other level, higher or lower, demand remaining the same, there would not be

an equilibrium in the market. Likewise, if the quantities of goods were greater or smaller than the demand, there would not be an equilibrium.

Equilibrium of the Firm : The firm is said to be in equilibrium when it maximizes its profit. The output which gives maximum profit to the firm is called equilibrium output. In the equilibrium state, the firm has no incentive either to increase or decrease its output. Since it is the maximum profit giving output which only gives no incentive to the firm to increase or decrease it, so it is in equilibrium when it gets maximum profit.

Firms in a competitive market are price-takers. This is because there are a large number of firms in the market who are producing identical or homogeneous products. As such these firms cannot influence the price in their individual capacities. They have to accept the price fixed (through interaction of total demand and total supply) by the industry as a whole.

See the following figure :
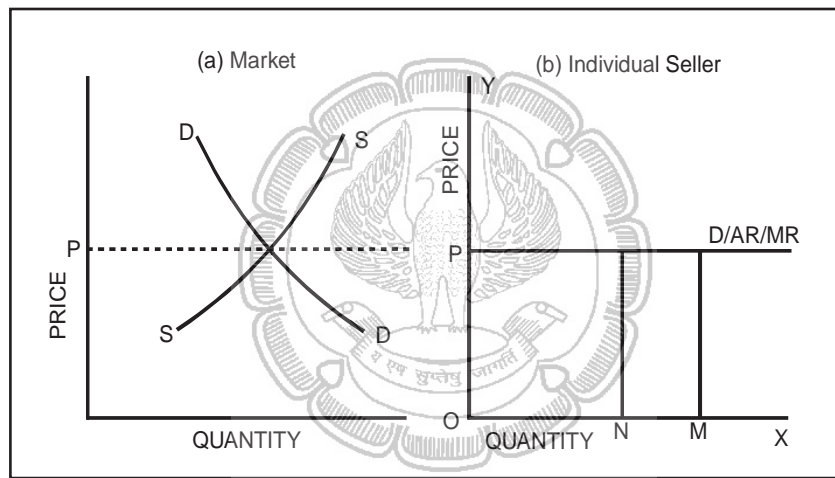
Fig.8 : The firm's demand curve under perfect competition

Industry price OP is fixed through the interaction of total demand and total supply of the industry. Firms have to accept this price as given and as such they are price-takers rather than price-makers. They cannot increase the price OP individually because of the fear of losing customers to other firms. They do not try to sell the product below OP because they do not have any incentive for lowering it. They will try to sell as much as they can at price OP.

As such P-line acts as a demand curve for them. Thus the demand curve facing an individual firm in a perfectly competitive market is horizontal one at the level of market price set by the industry and firms have to choose that level of output which yields maximum profit. Let us continue our example on page 126 in which demand and supply schedules for the industry were as follows :

Table – 3 : Equilibrium price for industry

Price (Rs.)	Demand (units)	Supply (units)
1	60	5
2	35	35
3	20	45
4	15	55
5	10	65

Equilibrium price for the industry thus fixed through the interaction of the demand and supply is Rs. 2 per unit. The individual firms will accept Rs. 2 per unit as the price and sell different quantities at this price. Let us consider the case of firm 'X'. Firm X's quantity sold, total revenue, average revenue and marginal revenue are given in Table 4 :

Table – 4 : Trends of Revenue for the Firm

Price (Rs.)	Quantity Sold	Total Revenue	Average Revenue	Marginal Revenue
2	8	16	2	2
2	10	20	2	2
2	12	24	2	2
2	14	28	2	2
2	16	32	2	2

Firm X's price, average revenue and marginal revenue are equal to Rs. 2. Thus we see that in a perfectly competitive market a firm's AR = MR = price.

Conditions for equilibrium of a firm : As discussed earlier, a firm in order to attain the equilibrium position has to satisfy two conditions :

(i)   The marginal revenue should be equal to the marginal cost. i.e. MR = MC. If MR is greater than MC, there is always an incentive for the firm to expand its production further and gain by sale of additional units. If MR is less than MC, the firm will have to reduce output since an additional unit adds more to cost than to revenue. Profits are maximum only at the point where MR = MC.

(ii) The MC curve should cut MR curve from below. In other words, MC should have positive slope.
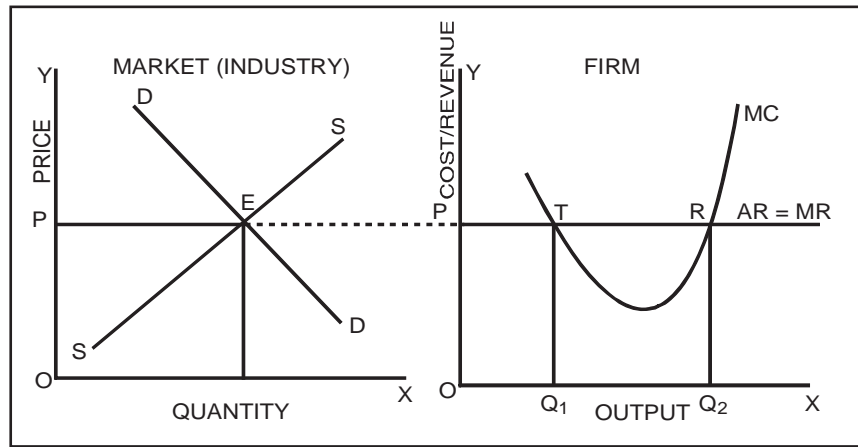
Fig. 9 : Equilibrium position for a firm under perfect competition

In figure 9, DD and SS are the industry demand and supply curves which equilibrate at E to set the market price as OP. The firms of perfectly competitive industry adopt OP price as given and considers P-Line as demand (average revenue) curve which is perfectly elastic at P. As all the units are priced at the same level, MR is a horizontal line equal to AR line. Note that MC curve cuts MR curve at two places T and R respectively. But at T, the MC curve is cutting MR curve from above. T is not the point of equilibrium as the second condition is not satisfied. The firm will benefit if it goes beyond T as the additional cost of producing additional unit is falling. At R, the MC curve is cutting MR curve from below. Hence R is the point of equilibrium and OQ_2 is equilibrium level of output.

3.0.2 Supply curve of the firm in a competitive market : One interesting thing about the MC curve of the firm in a perfectly competitive industry is that it depicts the firm's supply curve. This can be shown with the help of the following example.
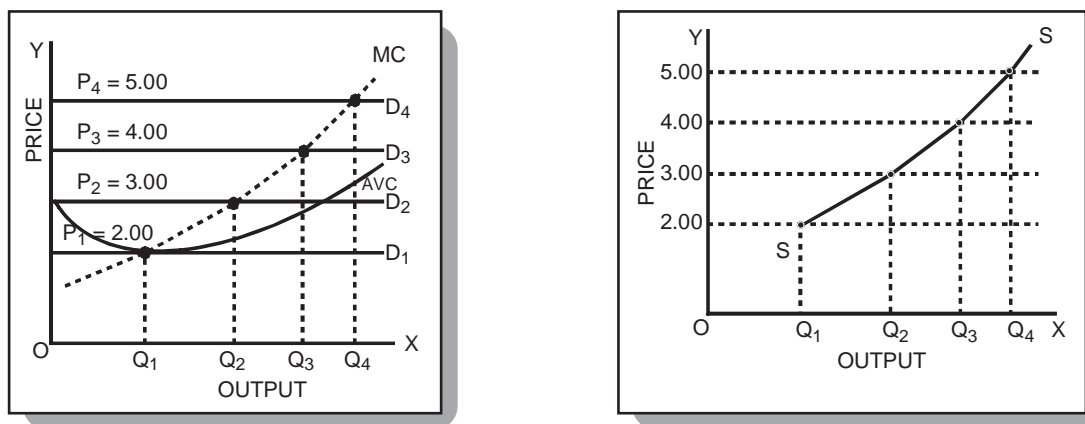
Fig. 10 : Marginal cost and supply curves for a price-taking firm

Suppose market price of a product is Rs. 2 corresponding to it we have D_1 as demand curve for the firm. At price Rs. 2, the firm supplies Q_1 output because here MR=MC. If the market price is Rs. 3, the corresponding demand curve is D_2. At Rs. 3, the quantity supplied is Q_2. Similarly, we have demand curves at D_3 and D_4 and corresponding supplies are Q_3 and Q_4. The firm's marginal cost curve which gives the marginal cost corresponding to each level of output is nothing but firm's supply curve that gives the quantity the firm will supply at each price.

For prices below AVC, the firm will supply zero units because here the firm is unable to meet even its variable cost for prices above AVC the firm will equate price and marginal cost.

When price is just meeting the AVC, the firm will break-even (Rs. 2 here). Here it is just meeting its average variable costs and there are no profits or losses.

Thus in perfect competition the firm's marginal cost curve above AVC has the identical shape of the firm's supply curve.

3.0.3 Can the the competitive firm earn profits? In the short run, a firm will attain equilibrium position and at the same time it will earn supernormal profits, normal profits or losses depending upon its cost conditions.

Supernormal Profits : There is a difference between normal profits and supernormal profits. When the average revenue of a firm is just equal to its average total cost, it earns normal profits. It is to be noted that here a normal percentage of profits for the entrepreneur for his managerial services is already included in the cost of production. When a firm earns supernormal profits its average revenues are more than its average total cost. Thus, in additional to normal rate of profit, the firm earns additional profits. The following example will make the above concepts clear :

Suppose the cost of producing 1,000 units of a product by a firm is Rs. 15,000. The entrepreneur has invested Rs. 50,000 in the business and normal rate of return in the market is 10 per cent. Thus the entrepreneur must earn at least Rs.5,000 (10% of 50,000) in this particular business. This Rs. 5,000 will be shown as a part of cost. Thus total cost of production is Rs. 20,000 (Rs. 15,000 + 5,000). If the firm is selling the product at Rs.20, it is earning normal profits because AR (Rs. 20) is equal to ATC (Rs. 20). If the firm is selling the product at Rs. 22 per unit, its AR (Rs. 22) is greater than its ATC (Rs. 20) and it is earning supernormal profit at the rate of Rs. 2 per unit.
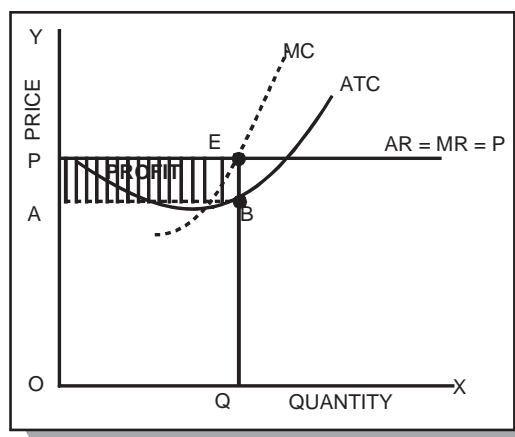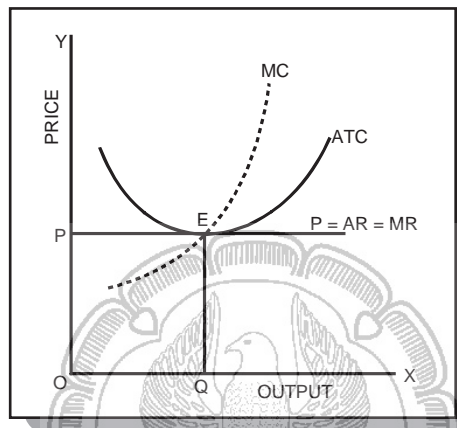

Fig. 11 : Short run equilibrium : Supernormal profit of a competitive firm

The Figure 11 shows how a firm can earn supernormal profit in the short run.

The diagram shows that in order to attain equilibrium, the firm tries to equate marginal revenue with marginal cost. MR (marginal revenue) curve is a horizontal line and MC (marginal cost) curve is a U-shaped curve which cuts the MR curve at E. At E, MR = MC. OQ is the equilibrium output for the firm. The firm's profit per unit is EB (AR-ATC), AR is EQ and ATC is BQ. Total profits are ABEP.

Normal profits : When the firm just meets its average total cost, it earns normal profits. Here AR = ATC.

Fig. 12 : Short run equilibrium of a competitive firm : Normal profits

The figure shows that MR = MC at E. The equilibrium output is OQ. Since here AR=ATC or OP = EQ, the firm is just earning normal profits.

Losses : The firm can be in an equilibrium position and still makes losses. This is the position when the firm is minimising losses. When the firm is able to meet its variable cost and a part of fixed cost it will try to continue production in the short run. If it recovers a part of the fixed costs, it will be beneficial for it to continue production because fixed costs (such as costs towards plant and machinery, building etc.) are already incurred and in such a case it will be able to recover a part of them. But if a firm is unable to meet its average variable cost also, it will be better for it to shut down.
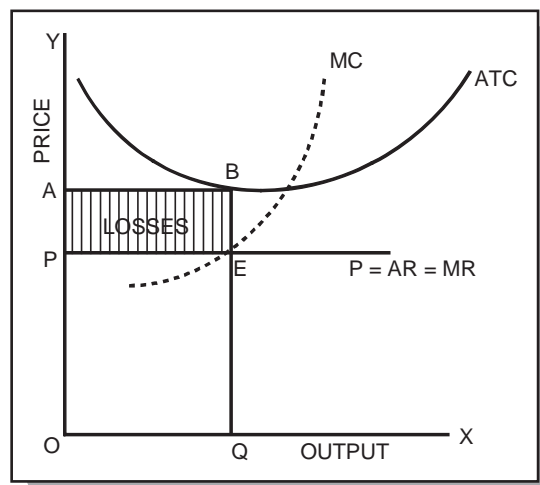
Fig. 13 : Short run equilibrium of a competitive firm : Losses

In figure 13, E is the equilibrium point and at this point AR = EQ and AC = BQ since BQ>EQ, firm is earning BE per unit loss and total loss is ABEP.

3.0.4 Long Run Equilibrium of the Firm : In the long run firms are in equilibrium when they have adjusted their plant so as to produce at the minimum point of their long run AC curve, which is tangent to the demand curve defined by the market price. In the long run the firms will be earning just normal profits, which are included in the AC. If they are making supernormal profits in the short run, new firms will be attracted in the industry; this will lead to a fall in price (a down ward shift in the individual demand curves) and an upward shift of the cost curves due to the increase of the prices of factors as the industry expands. These changes will continue until the AC is tangent to the demand curve. If the firms make losses in the short run they will leave the industry in the long run. This will raise the price and costs may fall as the industry contracts, until the remaining firms in the industry cover their total costs inclusive of the normal rate of profit.

In Fig. 14, we show how firms adjust to their long run equilibrium position. If the price is OP, the firm is making super-normal profits working with the plant whose cost is denoted by SAC_1. It will, therefore, have an incentive to build new capacity and it will move along its LAC. At the same time new firms will be entering the industry attracted by the excess profits. As the quantity supplied in the market increases, the supply curve in the market will shift to the right and price will fall until it reaches the level of OP_1 (in figure 14a) at which the firms and the industry are in long run equilibrium.
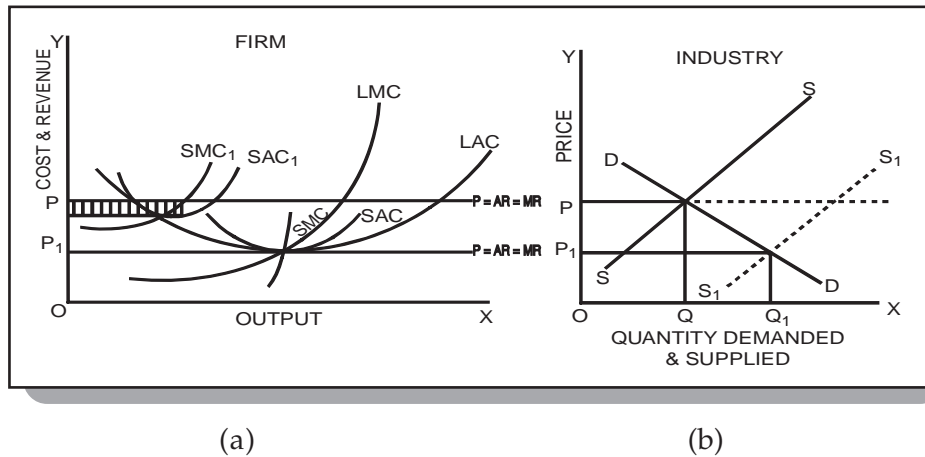
(a)   (b)

Fig. 14 : Long run equilibrium of the firm in a perfectly competitive market

The condition for the long run equilibrium of the firm is that the marginal cost be equal to the price and the long run average cost

i.e. LMC = LAC = P

The firm adjusts its plant size so as to produce that level of output at which the LAC is the minimum possible. At equilibrium the short run marginal cost is equal to the long run marginal cost and the short run average cost is equal to the long run average cost. Thus in the long run we have,

SMC = LMC = SAC = LAC = P = MR

This implies that at the minimum point of the LAC the corresponding (short run) plant is worked at its optimal capacity, so that the minima of the LAC and SAC coincide. On the other hand, the LMC cuts the LAC at its minimum point and the SMC cuts the SAC at its minimum point. Thus at the minimum point of the LAC the above equality is achieved.

3.0.5 Long run equilibrium of the industry : When (i) all the firms are earning normal profits only i.e. all the firms are in equilibrium (ii) there is no further entry or exit from the market, the industry is said to have attained long run equilibrium.
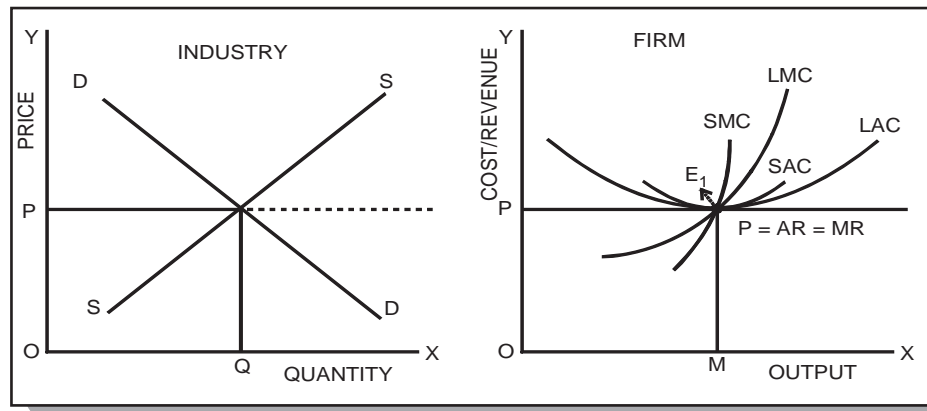
Fig. 15 : Long run equilibrium of a competitive industry and its firms

Figure 15 shows that in the long-run AR = MR = LAC = LMC at E_1. Since E_1 is the minimum point of LAC curve, the firm produces equilibrium output OM at the minimum (optimum) cost. The firm producing output at optimum cost is called an optimum firm. All the firms in the perfect competition in long run are optimum firms having optimum size and these firms charge minimum possible price which just covers their marginal cost.

Thus in the long run, in perfect competition, the market mechanism heads to an optimal allocation of resources. The optimality is shown by the following conditions which in the long run equilibrium of the industry :

a. The output is produced at the minimum feasible cost.

b. Consumers pay the minimum possible price which just covers the marginal cost i.e. MC = AR.

c. Plants are used at full capacity in the long run, so that there is no wastage of resources i.e. MC = AC.

d. Firms earn only normal profits i.e. AC = AR.

e. Firms maximize profits (i.e. MC=MR) but the level of profits will be just normal.

In other words, in the long run,

LAR = LMR = P = LMC = LAC and there will be optimum allocation of resources.

But it should be remembered that the perfectly competitive market system is a myth. This is because the assumptions on which this system is based are never found in the real world market conditions.

3.1 MONOPOLY

The word 'Monopoly' means "alone to sell". Thus monopoly is a situation in which there is a single seller of a product which has no *close substitute*. Pure monopoly is never found in practice. However, in public utilities such as transport, water and electricity, we generally find monopoly form of market.

3.1.0 Features of Monopoly Market : The following are the major features of the monopoly market :

(1) Single seller of the product : In a monopoly market there is only one firm producing or supplying a product. This single firm constitutes the industry and as such there is no distinction between the firm and the industry in a monopolistic market.

(2) Restrictions to Entry : In a monopolistic market, there are strong barriers to entry. The barriers to entry could be economic, institutional, legal or artificial.

(3) No close-substitutes : The monopolist generally sells a product which has no close substitutes. In such a case, the cross elasticity of demand for the monopolist's product and any other product is zero or very small. The price elasticity of demand for monopolist's product is also less than one. As a result, the monopolist faces a downward sloping demand curve.

While to some extent all goods are substitutes for one other, there may be essential characteristics in a good or group of goods which give rise to gaps in the chain of substitution. If one producer can so exclude competition that he controls the supply of a good, he can be said to be 'monopolist' – a single seller.

The monopolist may use his monopolistic power in any manner in order to realize maximum revenue. He may also adopt price discrimination.

In real life, there is seldom complete monopoly. But one producer may dominate the supply of a good or group of goods. In public utilities, e.g. transport, water, electricity generation etc. monopolistic markets may exist so as to reap the benefit of large scale production.

3.1.1 Monopolist's Revenue Curves : Since the monopolist firm is assumed to be the only producer of a particular product, its demand curve is identical with the market demand curve for the product. The market demand curve, which exhibits the total quantity of a product that buyers will offer to buy at each price, also shows the quantity that the monopolist will be able to sell at every price that he sets. If we assume that the monopolist sets a single price and supplies all buyers who wish to purchase at that price, we can easily find his average revenue and marginal revenue curves.
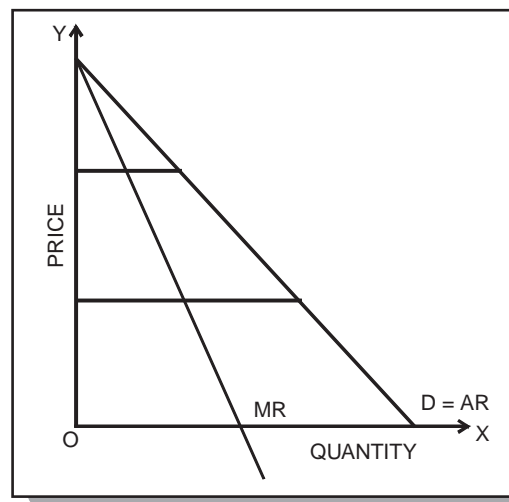

Fig. 16 : A monopolist's demand curve and marginal revenue curve

Suppose the straight line in Fig. 16 is the market demand curve for a particular product 'A'. Suppose Mr. X and Co. is the single producer of the product A so that it faces the entire market demand and hence the downward sloping demand curve.

We have tabulated selected values of price and quantity from this demand curve in Table 5 and computed the amounts of average, total and marginal revenue corresponding to these levels.

Table – 5

Average revenue, Total revenue and Marginal revenue for a Monopolist

Quantity sold	Average Revenue (AR = P)	Total Revenue (TR)	Marginal Revenue (MR)
0	10.00	0	
1	9.50	9.50	9.50
2	9.00	18.00	8.50
3	8.50	25.50	7.50
4	8.00	32.00	6.50
5	7.50	37.50	5.50
6	7.00	42.00	4.50
7	6.50	45.50	3.50
8	6.00	48.00	2.50
9	5.50	49.50	1.50
10	5.00	50.00	.50
11	4.50	49.50	(-).50

If the seller wishes to charge Rs. 10, he cannot sell any unit, alternatively, if he wishes to sell 10 units, his price cannot be higher than Rs. 5. Because the seller charges a single price for all units he sells, average revenue per unit is identical with price, and thus the market demand curve is the average revenue for the monopolist.

In perfect competition, average and marginal revenue are identical, but this is not the case in a monopoly since the monopolist knows that if he wishes to increase his sales he will have to reduce the price of the product. Consider the example given. If the seller wishes to sell 3 units, he will have to reduce the price from Rs. 9 to Rs. 8.50. The third unit is sold for Rs. 8.50 only - the price of all 3 units. This adds Rs. 8.50 to the firm's revenue. But in order to sell the 3rd unit, the firm had to lower its price from Rs. 9 to Rs. 8.50. It thus receives Re.50 less on each of 2 units it could have sold for Rs. 9. The marginal revenue over the interval from 2 to 3 units is thus Rs. 7.50 only. Again if he wishes to sell 4 units, he will again reduce the price from Rs. 8.50 to 8. The marginal revenue here will be Rs. 6.50 only. Marginal revenue is less than the price, because the firm had to lower the price in order to sell an extra unit. The relationship between AR and MR of a monopoly firm can be stated as follows :

(i)   AR and MR are both negative sloped (downward sloping) curves.

(ii) MR curve lies half-way between the AR curve and the Y axis. i.e. it cuts the horizontal line between Y axis and AR into two equal parts.

(iii) AR cannot be zero, but MR can be zero or even negative.

**3.1.2 Profit maximisation in a monopolised market Equilibrium of the monopoly firm** : Firms in a perfectly competitive market are price-takers so that they are only concerned about determination of output. But this is not the case with a monopolist. A monopolist has to determine not only output but also price for his product. Since, he faces a downward sloping demand curve, if he raises price of his product his sales will go down. On the other hand, if he wants to improve his sales volume he will have to be content with lesser price. He will try to reach that level of output at which profits are maximum i.e. he will try to attain the equilibrium level of output. How he attains this level can be found out as is shown below.

Short run Equilibrium

Conditions for the equilibrium : The twin conditions for equilibrium in a monopoly market are same as discussed earlier.

(i)   MC = MR

(ii) MC curve must cut MR curve from below.

Graphically, we can depict these conditions in figure 17.
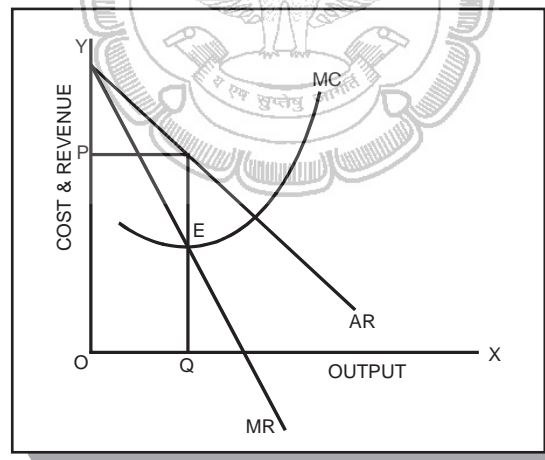
Fig. 17 : Equilibrium position of a monopolist (Short run)

The figure shows that MC curve cuts MR curve at E. That means at E, equilibrium price is OP and equilibrium output is OQ.

In order to know whether the monopolist is making profits or losses in the short run, we need to introduce average total cost curve. The following figure shows how the firm makes profits in the short run.
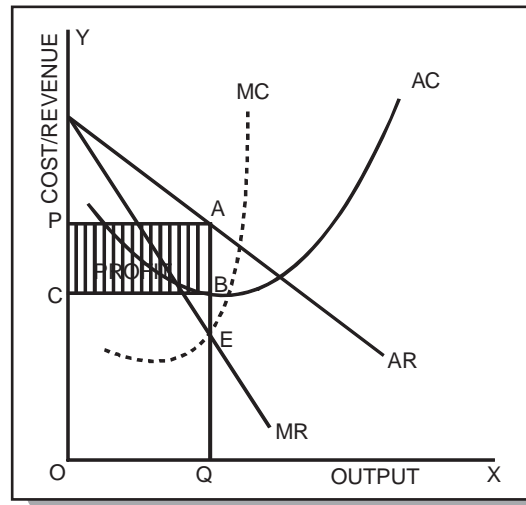
Fig. 18 : Firm's equilibrium under monopoly : maximisation of profits

Figure 18 shows that MC cuts MR at E to give equilibrium output as OQ. At OQ, price charged is OP (we find this by extending line EQ till it touches AR or demand curve). Also at OQ, the cost per unit is BQ. Therefore, profit per unit is AB or total profit is ABCP.

Can a monopolist incur losses? One of the misconceptions about a monopolist is that he always makes profits. It is to be noted that nothing guarantees that a monopolist makes profits. It all depends upon his demand and cost conditions. If he faces a very low demand for his product and his cost conditions are such that ATC >AR, he will not be making profits but incur losses. Figure 19 depicts this position.
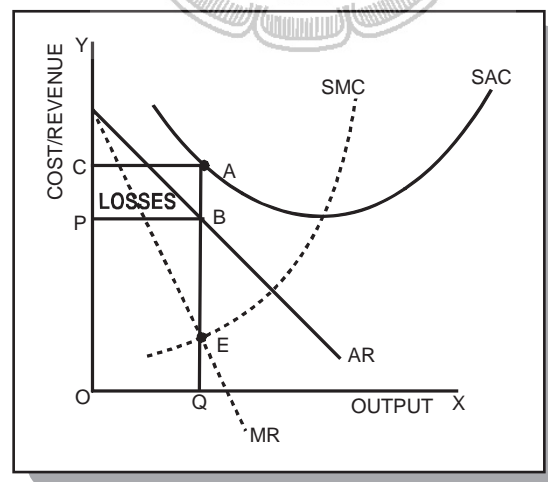
Fig. 19 : Equilibrium of the monopolist : Losses in the short run

In the above figure MC cuts MR at E. Here E is the point of loss minimisation. At E, equilibrium output is OQ and equilibrium price is OP. Cost corresponding to OQ is QA. Cost per unit of output i.e. QA is greater than revenue per unit which is BQ. Thus the monopolist incurs losses

to the extent of AB per unit or total loss is ABPC. Whether the monopolist stays in business in the short run depends upon whether he meets his average variable cost or not. If he covers average variable cost and at least a part of fixed cost, he will not shut down because he contributes something towards fixed costs which are already incurred. If he is unable to meet his average variable cost even, he will shut down.

Long Run Equilibrium : Long run is a period long enough to allow the monopolist to adjust his plant size or use his existing plant at any level that maximizes his profit. In the absence of competition, the monopolist need not produce at the optimal level. He can produce at sub-optimal scale also. In other words, he need not reach the minimum of LAC curve, he can stop at any place where his profits are maximum.
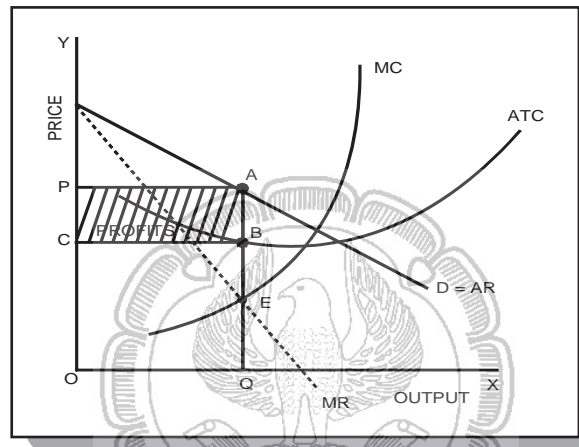

Fig. 20 : Long run equilibrium of a monopolist

However, one thing is certain : The monopolist will not continue if he makes losses in the long run. He will continue to make super normal profits even in the long run as entry of outside firms is blocked.

3.1.3 Price Discrimination : Consider the following examples.

The family doctor in your neighbourhood charges a higher fees from a rich patient compared to the fees charged from a poor patient even though both are suffering from viral fever. Why?

Electricity companies sell electricity at a cheaper rate for home consumption in rural areas than for industrial use. Why?

The above cases are examples of price discrimination. What is price discrimination? Price discrimination occurs when a producer sells a specific commodity or service to different buyers at two or more different prices for reasons not associated with differences in cost.

Price discrimination is a method of pricing adopted by the monopolist in order to earn abnormal profit. It refers to the practices of charging different prices for the different unit of the same commodity.

Further examples :

(a) Railways separate high-value or relatively small-bulk commodities which can bear higher freight charges from other categories of goods.

(b) Some countries dump goods at low prices in foreign markets to capture them.

(c) Some universities charge higher tuition fees from evening class students than from other scholars.

(d) A lower subscription is charged from student readers in case of certain journals.

(e) A higher price for vegetables may be charged in posh localities inhabited by the rich than in other localities.

Price discrimination cannot persist under perfect competition because the seller has no influence over market determined rate. Price discrimination requires an element of monopoly so that the seller can influence the price of his product.

Conditions for price discrimination : Price discrimination is possible only under the following conditions :

(i) The seller should have some control over the supply of his product i.e. monopoly power in some form is necessary (not sufficient) to discriminate price.

(ii) The seller should be able to divide his market into two or more sub-markets.

(iii) The price-elasticity of the product should be different in different markets. The monopolist fixes up a high price for his product for those buyers whose price elasticity of demand for the product is less than one. This implies that when the monopolist charges a higher price from them, they do not significantly reduce their purchases in response to high price.

(iv) It should not be possible for the buyers of low-priced market to resell the product to the buyers of high-priced market.

Thus we note that discriminating monopolist charges a higher price from the market which has a relatively inelastic demand. The market which is highly responsive is charged less. On the whole, the monopolist benefits from both the markets.

A numerical example will help you to understand price- discrimination more clearly.

Suppose the single monopoly price is Rs. 30 and elasticities of demand in markets A and B are respectively 2 and 5. Then,

$$\text{MR in market A} = AR_A\left(\frac{e-1}{e}\right)$$

$$= 30\left(\frac{2-1}{2}\right)$$

$$= 15$$

$$\text{MR in market B} = AR_B\left(\frac{e-1}{e}\right)$$

$$= 30\left(\frac{5-1}{5}\right)$$

$$= 24$$

It is thus clear that marginal revenues in the two markets are different when elasticities of demand at the single price are different. Further, we see that marginal revenue in the market in which elasticity is high is greater than the marginal revenue in the market where elasticity is low. Now it is profitable for the monopolist to transfer some amount of the product from market A where elasticity is less and therefore marginal revenue is low to market B where elasticity is high and marginal revenue is large. Thus, when the monopolist transfers one unit from A to B, the loss in revenue (Rs. 15) will be more than compensated by gain in revenue (Rs. 24). On the whole, the gain in revenue will be Rs. 9 (24-15) here. It is to be noted that when some units are transferred from A to B, price in market A will rise and it will fall in B. This means that the monopolist is now discriminating between markets A and B. Again it is to be noted that there is a limit to which units can be transferred from A to B. Once this limit is reached and once a point is reached when the marginal revenues in the two markets become equal as a result of some transfer of output, it will no longer be profitable to shift more output from market A to market B. When this point of a equality is reached, the monopolist will be charging different prices in the two markets – a higher price in market A with lower elasticity of demand and a lower price in market B with higher elasticity of demand.

Objectives of Price discrimination:

a.   to earn maximum profit

b.   to dispose of surplus stock

c.   to enjoy the economies of scale

d.   to capture foreign markets

e.   to secure equity through pricing.

Price discrimination may take place beacause of personal, local, income, size of the purchase, time of purchase and age of the consumers reasons.

Price discrimination may be related to the consumer surplus enjoyed by the consumers. Prof. Pigou classified three degrees of price discrimination. Under the first degree price discrimination the monopolist will fix a price which will take away the entire consumer's surplus. Under the second degree price discrimination he will take away only a part of the consumers' surplus. Here price varies according to the quantity sold. Larger quantities are available at lower unit price. Under third degree price discrimination, price varies by attributes such as location or by customer segment. Here the monopolist will divide the consumers into separate sub markets and charge different prices in different sub-markets. E.g. Dumping.

Equilibrium under price discrimination

Under simple monopoly, a single price is charged for the whole output; but under price discrimination the monopolist will charge different prices in different sub-markets. First of all, therefore, the monopolist has to divide his total market into various sub-markets on the basis of

difference in elasticity of demand in them. For the sake of making our analysis simple we shall explain the case when the total market is divided into two sub-markets.

In order to reach the equilibrium position, the discriminating monopolist has to take two decisions: 1. how much total output should he produce; and 2. how the total output should be distributed between the two sub-markets and what prices he should charge in the two sub-markets.

The same marginal principle will guide his decision to produce a total output as that which guides a perfect competitor or a simple monopolist. In other words, the discriminating monopolist will compare the marginal revenue with the marginal cost of the output. But he has to find out first the aggregate marginal revenue of the two sub-markets taken together and compare this aggregate marginal revenue with marginal cost of the total output. Aggregate marginal revenue curve is obtained by summing up laterally the marginal revenue curves of the sub-markets.

In figure 21, MR_a is the marginal revenue curve in sub-market A corresponding to the demand curve D_a. Similarly, MR_b is the marginal revenue in sub-market B corresponding to the demand curve D_b. Now, the aggregate marginal revenue curve AMR, which has been shown in figure (iii), has been derived by adding up laterally MR_a and MR_b. This aggregate marginal revenue curve depicts the total amount of output that would be sold in the two sub-markets taken together corresponding to each value of the marginal revenue. Marginal cost curve of the monopolist is shown by the curve MC in diagram (iii).

The discriminating monopolist will maximize his profits by producing the level of output at which marginal cost curve MC intersects the aggregate marginal revenue curve AMR. It is manifest from diagram (iii) that profit maximizing output is OM, for only at OM aggregate marginal revenue is equal to the marginal cost of the whole output. Thus the discriminating monopolist will decide to produce OM level of output.

Once the total output to be produced has been determined, the next task for the discriminating monopolist is to distribute the total output between the two sub-markets. He will distribute the total output OM in such a way that marginal revenues in the two sub-markets are equal. Marginal revenues in the two-sub-markets must be equal if the profits are to be maximized. If he is so allocating the output into two markets that the marginal revenues in the two are not equal, then it will pay him to transfer some amount from the sub-market in which the marginal revenue is less to the sub-market in which the marginal revenue is greater. Only when the marginal revenues in the two markets are equal, it will be unprofitable for him to shift any amount of the good from one market to the other.

But for the discriminating monopolist to be in equilibrium it is essential not only that the marginal revenues in the two markets should be the same but that they should also be equal to the marginal cost of the whole output. Equality of marginal revenues in the two markets with marginal cost of the whole output ensures that the amount sold in the two markets will together be equal to the whole output OM which has been fixed by equalizing aggregate marginal revenue with marginal cost. It will be seen from figure (iii) that at equilibrium output OM, marginal cost is ME.

Now, the output OM has to be distributed in the two markets in such a way that marginal revenue in them should be equal to the marginal cost ME of the whole output. It is clear form the diagram (i) that OM_1 must be sold in the sub-market A, because marginal revenue M_1E_1 at amount OM_1 is equal to marginal cost ME. Similarly, OM_2 must be sold in sub-market B, since marginal revenue M_2E_2 of amount OM_2 is equal to the marginal cost ME of the whole output. To conclude, demand and cost conditions being given, the discriminating monopolist will produce total output OM and will sell amount OM_1 in sub-market A and amount OM_2 in sub-market B. It should be carefully noted that the total output OM will be equal to $OM_1 + OM_2$.

Another important thing to discover is what prices will be charged in the two markets. It is clear from the demand curve that amount OM_1 of the good can be sold at price OP_1 in sub-market A. Therefore, price OP_1 will be set in sub-market A. Like wise, amount OM_2 can be sold at price OP_2 in sub-market B. Therefore, price OP_2 will be set in sub-market B. Further, it should be noted that price will be higher in the market A where the demand is less elastic than in market B where the demand is more elastic. Thus, price OP_1 is greater than the price OP_2.
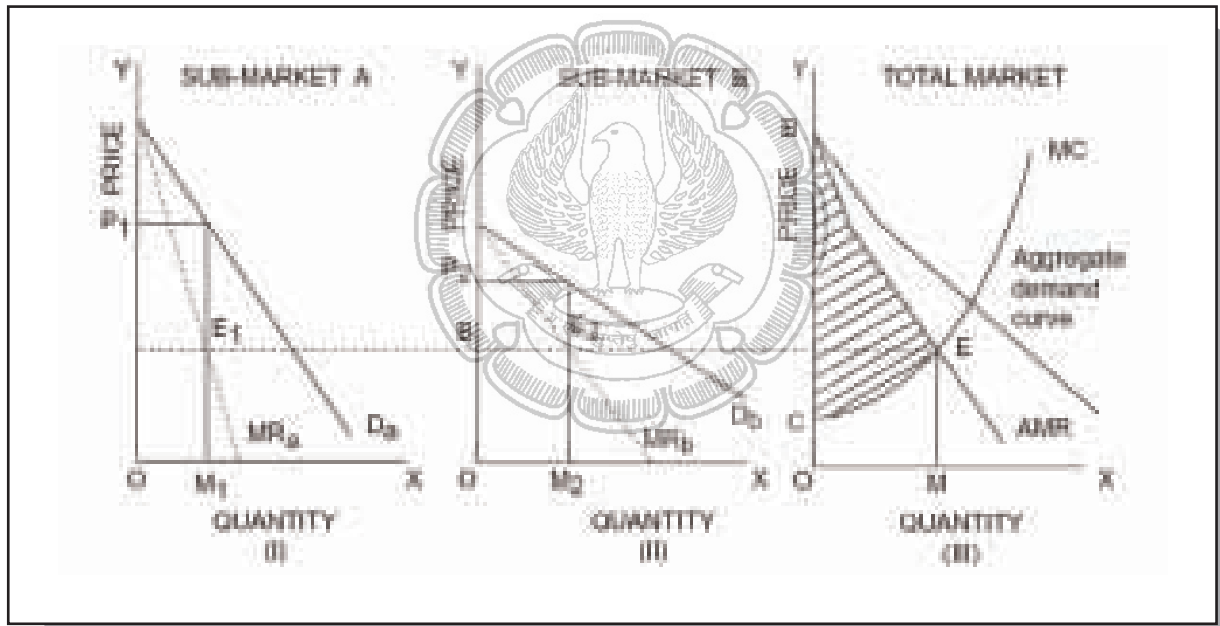
Fig. 21: Fixation of Total Output and different price in the two sub-markets by the discriminating monopolist

3.2   IMPERFECT COMPETITION-MONOPOLISTIC COMPETITION

Consider the market for soaps and detergents. Among the well known brands on sale are Lux, Rexona, Hamam, Dettol, Liril, Pears, Lifebuoy Plus, Dove and so many others. Is this market an example of perfect competition? Since all the soaps are almost similar, this appears to be an example of perfect competition. But on a close inspection we find that each seller has at least some variation between his product and those of his competitors. For example, whereas Lux is exhibited to be a beauty soap, Liril is more associated with freshness. And for that reason

Dettol soap is placed as antiseptic and Dove for young smooth skin. The area of product and service differentiation gives each seller a chance to attract business to himself on some basis other than price. This is the monopolistic part of market situation. Thus this market contains features of both the markets discussed earlier – monopoly and perfect competition. In fact, this type of market is more common than pure competition or pure monopoly. The industries in monopolistic competition include clothing manufacturing and retail trade in large cities. There are many hundreds of manufacturers of women's dresses, and hundreds of grocery shops in average medium sized or large city.

3.2.0 Features of Monopolistic Competition :

(i) *Large number of sellers* : In a monopolistically competitive market, there are a large number of sellers who individually have a small share in the market.

(ii) *Product differentiation* : In a monopolistic competitive market, the products of different sellers are differentiated on the basis of brands. These brands are generally so much advertised that a consumer starts associating the brand with a particular manufacturer and a type of brand loyalty is developed. Product differentiation gives rise to an element of monopoly to the producer over the competing product. As such, the producer of an individual brand can raise the price of his product knowing that he will not lose all the customers to other brands because of absence of perfect substitutability. Since, however, all the brands are close substitutes of one another, the seller will lose some of his customers to his competitors. Thus this market is a blend of monopoly and perfect competition.

(iii) *Freedom of entry or exit* : New firms are free to enter into the market and existing firms are free to quit it.

(iv) *Non-price competition* : In a monopolistically competitive market, sellers try to compete on basis other than price, as for example aggressive advertising, product development, better distribution arrangements, efficient after-sales service, and so on. A key base of non-price competition is a deliberate policy of product differentiation. Sellers attempts to promote their products not by cutting prices but by incurring high expenditure on publicity and advertisement and other sale promoting techniques mentioned above. This is because price competition may result in price – wars which may throw a few firms out of market.

3.2.1   Price-output determination under monopolistic competition : Equilibrium of a firm : In a monopolistically competitive market since the product is differentiated between firms, each firm does not face a perfectly elastic demand for its products. Each firm is a price maker and is in a position to determine price of its own product. As such, the firm is faced with a downward sloping demand curve for its product. Generally, the less differentiated the product is from its competitors, the more elastic this curve will be.
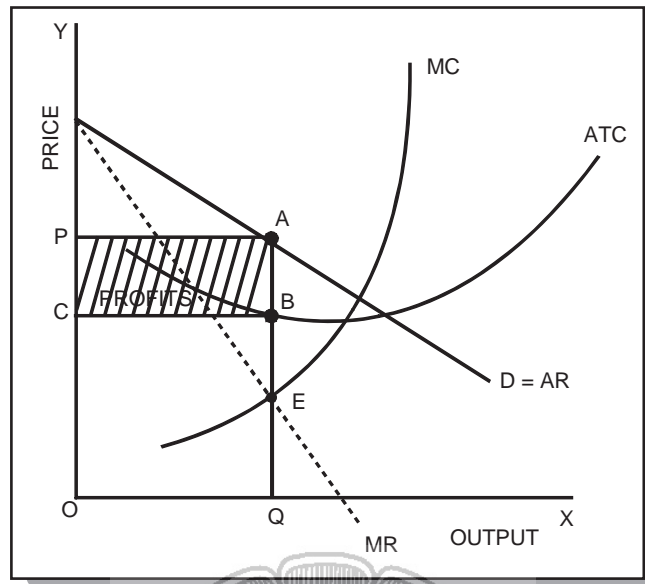
Fig. 22 : Short run equilibrium of a firm in monopolistic competition : Super-normal profits

The firm depicted in figure 22 has a downward sloping but flat demand curve for its product. The firm is assumed to have U-shaped short run cost curve.

Conditions for the Equilibrium of an individual firm : The conditions for price-output determination and equilibrium of an individual firm may be stated as follows :

(i)   MC = MR

(ii)   MC curve must cut MR curve from below.

Figure 22 shows that MC cuts MR curve at E. At E, the equilibrium price is OP and equilibrium output is OQ. Since per unit cost is BQ, per unit super-normal profit (i.e. price-cost) is AB (or PC) and total super-normal profit is APCB.

The firm may also be earning losses in the short run. This is shown in fig. 23.

The figure shows that per unit cost (AQ) is higher than price OP (or BQ) of the product of the firm and loss per unit is AB (AQ-BQ). Total loss is ACPB.

What about long run equilibrium of the industry? If the firms in a monopolistically competitive industry earn super-normal profits in the short run, there will be an incentive for new firms to enter the industry. As more firms enter, profits per firm will go on decreasing as the total demand for the product will be shared among a larger number of firms. This will happen till all the profits are wiped away and all the firms earn only normal profits. Thus in the long run all the firms will earn only normal profits.
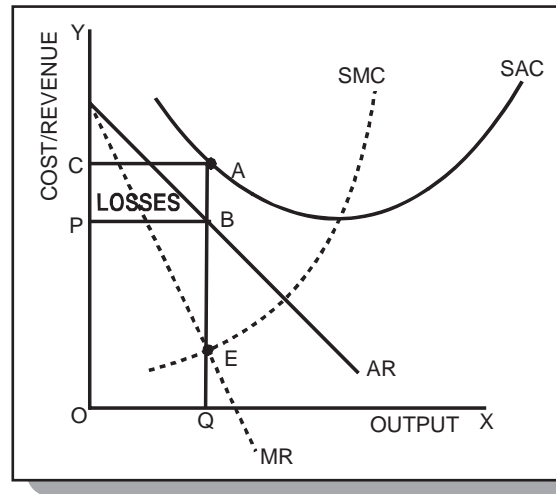
Fig. 23 : Short run equilibrium of a firm in Monopolistic Competition – With losses
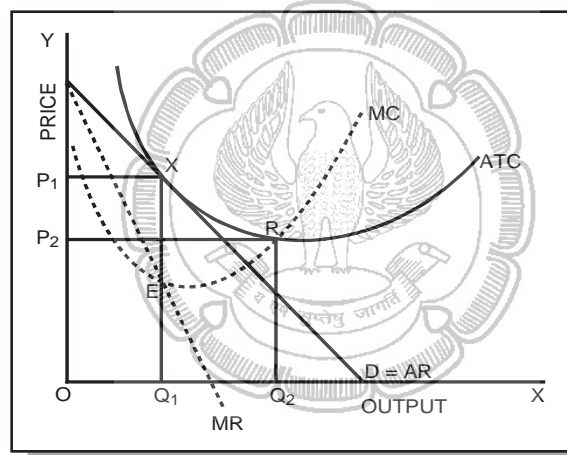
Fig. 24 : The long-term equilibrium of a firm in monopolistic competition

Figure 24 shows the long run equilibrium of a firm in a monopolistically competitive market. The average revenue curve touches the average cost curve at point X corresponding to quantity Q_1 and price P_1. At equilibrium (i.e. MC = MR) profits are zero, since average revenue equals average costs. All firms are earning zero supernormal profits or just normal profits.

In case of losses in the short run, the loss making firms will exit from the market and this will go on till the remaining firms make normal profits only.

It is to be noted that an individual firm in the long run is in equilibrium position at a position where it has excess capacity. That is, it is producing a lower quantity than its full capacity level. The firm in Figure 24 could expand its output from Q_1 to Q_2 and reduce average costs. But it does not do so because to do so would be to reduce average revenue even more than average costs. It implies that firms in monopolistic competition are not of optimum size and there exists excess capacity ($Q_1 Q_2$ in our example above) of production with each firm.

3.3 OLIGOPOLY

We have studied price and output determination under three market forms, namely, perfect competition, monopoly and monopolistic competition. However, in the real world economies we find that many of the industries are oligopolistic. Oligopoly is an important form of imperfect competition. Oligopoly is often described as 'competition among the few'. In other words, when there are few (two to ten) sellers in a market selling homogeneous or differentiated products, oligopoly is said to exist. Consider the example of cold drinks industry or automobile industry. Prof. Stigler defines oligopoly as that "situation in which a firm bases its market policy in part on the expected behavior of a few close rivals". There are a handful firms manufacturing cold drinks in India. Similarly there are a few members of automobile industry in India. These industries exhibit some special features which are discussed in the following paragraphs.

Types of Oligopoly:

Pure oligopoly or perfect oligopoly occures when the product dealt is homogeneous in nature, e.g. Aluminum industry. **Differentiated or imperfect oligopoly** is based on product differentiation, e.g. Talcum powder.

Open and closed oligopoly: In the open oligopoly new firms can enter the market and compete with the existing firms. But in closed oligopoly entry is restricted.

Collusive and Competitive oligopoly: When few firms of the oligopolist market come to a common understanding or act in collusion with each other in fixing price and output, it is collusive oligopoly. When there is a lack of understanding between the firms and they compete with each other it is called competitive oligopoly.

Partial or full oligopoly: Oligopoly is partial when the industry is dominated by one large firm which is considered or looked upon as the leader of the group. The dominating firm will be the price leader. In full oligopoly, the market will be conspicuous by the absence of price leadership.

Syndicated and organized oligopoly: Syndicated oligopoly refers to that situation where the firms sell their products through a centralized syndicate. Organized oligopoly refers to the situation where the firms organize themselves into a central association for fixing prices, output, quotas, etc.

3.3.0 Characteristics of Oligopoly Market :

(i) **Interdependence :** The most important feature of oligopoly is interdependence in decision-making of the few firms which comprise the industry. This is because when the number of competitors is few, any change in price, output, product, by a firm will have direct effect on the fortune of the rivals, who will then retaliate in changing their own prices, output or advertising technique as the case may be. It is, therefore, clear that an oligopolistic firm must consider not only the market demand for the industry product but also the reactions of other firms in the industry to any major decision it takes.

(ii) **Importance of advertising and selling costs** : A direct effect of interdependence of oligopolists is that the various firms have to employ various aggressive and defensive marketing weapons to gain a greater share in the market or to maintain their share. For

this various firms have to incur a good deal of costs on advertising and other measures of sales promotion. Therefore, there is a great importance of advertising and selling costs in an oligopoly market. It is to be noted that firms in such type of market avoid price cutting and try to compete on non-price basis because if they start under cutting one another a type of price-war will emerge which will drive a few of them out of the market as customers will try to buy from the seller selling at the cheapest price.

(iii) **Group behaviour :** The theory of oligopoly is a theory of group behaviour, not of mass or individual behaviour and to assume profit maximising behaviour on oligopolist's part may not be very valid. There is no generally accepted theory of group behaviour. Do the members of a group agree to pull together in promotion of common interest or will they fight to promote their individual interests? Does the group possess any leader? If so, how does he get the others to follow him? These are some of the questions that need to be answered by the theory of group behaviour. But one thing is certain. Each oligopolist closely watches the business behaviour of the other oligopolists in the industry and designs his moves on the basis of some assumptions of how they behave or likely to behave.

3.3.1 Price and output decisions in an oligopolistic market : Because of interdependence an oligopolistic firm cannot assume that its rival firms will keep their prices and quantities constant, when it makes changes in its price and/or quantity. When an oligopolistic firm changes its price, its rival firms will retaliate or react and change their prices which in turn would affect the demand of the former firm. Therefore, an oligopolistic firm cannot have sure and definite demand curve, since it keeps shifting as the rivals change their prices in reaction to the price changes made by it. Now when an oligopolist does not know his demand curve, what price and output he will fix cannot be ascertained by economic analysis. However, economists have established a number of price-output models for oligopoly market depending upon the behaviour pattern of the members of the group.

3.3.2 Kinked Demand Curve : It has been observed that in many oligopolistic industries prices remain sticky or inflexible for a long time. They tend to change infrequently, even in the face of declining costs. Many explanations have been given for this price rigidity under oligopoly and the most popular explanation is kinked demand curve hypothesis given by an American economist Sweezy. Hence this is called Sweezy's Model.

The demand curve facing an oligopolist, according to the kinked demand curve hypothesis, has a 'kink' at the level of the prevailing price. The kink is formed at the prevailing price level. It is because the segment of the demand curve above the prevailing price level is highly elastic and the segment of the demand curve below the prevailing price level is inelastic. A kinked demand curve dD with a kink at point P has been shown in Fig. 25.
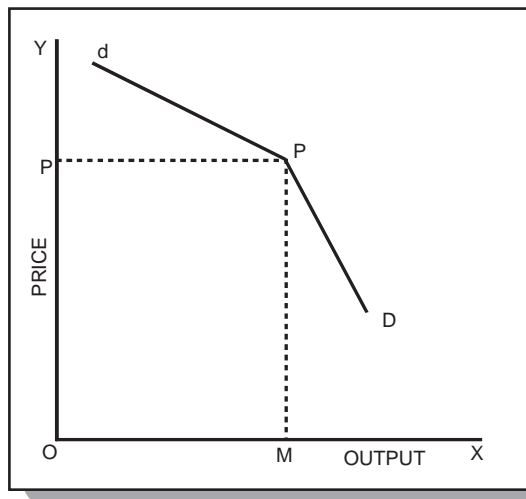
Fig. 25 : Kinked Demand Curve under oligopoly

The prevailing price level is MP and the firm produces and sells output OM. Now the upper segment dP of the demand curve dD is relatively elastic and lower segment PD is relatively inelastic. This difference in elasticities is due to the particular competitive reaction pattern assumed by the kinky demand curve hypothesis. This assumed pattern is :

Each oligopolist believes that if he lowers the price below the prevailing level its competitors will follow him and will accordingly lower prices, whereas if he raises the price above the prevailing level, its competitors will not follow its increase in price.

This is because when an oligopolist lowers the price of its product its competitors will feel that if they do not follow the price cut their customers will run away and buy from the firm which has lowered the price. Thus in order to maintain their customers they will also lower their prices. Thus the lower portion of the demand curve PD is price inelastic showing that very little increase in sales can be obtained by a reduction in price by an oligopolist. On the other hand, if a firm increases the price of its product there will a substantial reduction in its sales because as a result of the rise in its price, its customers will withdraw from it and go to its competitors which will welcome the new customers and will gain in sales. These happy competitors will have therefore no motivation to match the price rise. The oligopolist who raises its price will lose a great deal and will therefore refrain from increasing price. This behaviour of the oligopolists explains the elastic upper portion of the demand curve dp showing a large fall in sales if a producer raises his price.

Each oligopolist will, thus, adhere to the prevailing price seeing no gain in changing it and a kink will be formed at the prevailing price. Thus, rigid or sticky prices are explained according to the kinked demand curve theory.

SUMMARY

The features of the various types of market forms are summarised in the table given below :

Classification of Market Forms

	Form of Market Structure	Number of firms	Nature of product	Price Elasticity of Demand of a firm	Degree of Control over price
(a)	Perfect competition	A large number of firms	Homogeneous	Infinite	None
(b)	Monopoly	One	Unique product without close substitute	Small	Very Considerable
(c)	Imperfect Competition				
	(i) Monopolistic Competition	A large number of firms	Differentiated products	Large	Some
	(ii) Oligopoly	Few Firms	Homogeneous or differentiated product	Small	Some

Perfect Competition, as evident from the above table is said to prevail where there is a large number of firms producing a homogeneous product. No individual firm is in a position to influence the price of the product and therefore the demand curve facing it will be a horizontal straight line at the prevailing market price. Short run equilibrium price of the firm is at a point where MC = MR of the firm. In the short run firms may be earning supernormal profits and some firms may be earning losses at the equilibrium price. In the long-run all the supernormal profits or losses get wiped away with entry or exit of the firms from the industry and all the firms earn normal profits.

Monopoly is an extreme form of imperfect competition with a single seller of a product which has no close substitutes. As such, a monopolist has considerable control over the price of his product. Short run equilibrium of the monopolist is at a point where MC = MR. In the long run he may continue to have super normal profits.

Monopoly control over the product gives rise to price-discrimination (i.e. charging different prices for the same product from different consumers).

Imperfect Competition is an important category wherein the individual firm exercises control over the price to a smaller or larger degree depending upon the degree of imperfection present. The first important and popular category of imperfect competition is monopolistic competition. In this type of market, there are a large number of monopolists competing with one another. Demand curve is highly elastic and a firm enjoys some control over the price. The other category is that of oligopoly in which there is competition among the few firms producing homogeneous or differentiated products. The limited number of firms ensures that each of them will have to consider the group reaction to any action it takes.

MULTIPLE CHOICE QUESTIONS

1. In the table below what will be equilibrium market price?

Price (Rs.)	Demand (tonnes per annum)	Supply (tonnes per annum)
1	1000	400
2	900	500
3	800	600
4	700	700
5	600	800
6	500	900
7	400	1000
8	300	1100

(a) Rs. 2

(b) Rs. 3

(c) Rs. 4

(d) Rs. 5

2. Assume that when price is Rs. 20, quantity demanded is 9 units, and when price is Rs. 19, quantity demanded is 10 units. Based on this information, what is the marginal revenue resulting from an increase in output from 9 units to 10 units.

(a) Rs. 20

(b) Rs. 19

(c) Rs. 10

(d) Re. 1

3. Assume that when price is Rs.20, quantity demanded is 15 units, and when price is Rs.18, quantity demanded is 16 units. Based on this information, what is the marginal revenue resulting from an increase in output from 15 units to 16 units?

(a) Rs. 18

(b) Rs. 16

(c) Rs. 12

(d) Rs. 28

4. Suppose a firm is producing a level of output such that MR > MC. What should be firm do to maximize its profits?

(a) The firm should do nothing.

(b) The firm should hire less labour.

(c) The firm should increase price.

(d) The firm should increase output.

5. Marginal Revenue is equal to :

(a) the change in price divided by the change in output.

(b) the change in quantity divided by the change in price.

(c) the change in P x Q due to a one unit change in output.

(d) price, but only if the firm is a price searcher.

6. Suppose that a sole proprietorship is earning total revenues of Rs. 1,00,000 and is incurring explicit costs of Rs. 75,000. If the owner could work for another company for Rs. 30,000 a year, we would conclude that :

(a) the firm is incurring an economic loss.

(b) implicit costs are Rs. 25,000.

(c) the total economic costs are Rs. 1,00,000.

(d) the individual is earning an economic profit of Rs. 25,000.

7. Which of the following is not an essential condition of pure competition?

(a) Large number of buyers and sellers

(b) Homogeneous product

(c) Freedom of entry

(d) Absence of transport cost

8. What is the shape of the demand curve faced by a firm under perfect competition?

(a) Horizontal

(b) Vertical

(c) Positively sloped

(d) Negatively sloped

9. Which is the first order condition for the profit of a firm to be maximum?

(a) AC = MR

(b) MC = MR

(c) MR = AR

(d) AC = AR

10. Which of the following is not a characteristic of a "price taker"?

(a) TR = P x Q

(b) AR = Price

(c) Negatively – sloped demand curve

(d) Marginal Revenue = Price

11. Which of the following statements is false?

(a) Economic costs include the opportunity costs of the resources owned by the firm.

(b) Accounting costs include only explicit costs.

(c) Economic profit will always be less than accounting profit if resources owned and used by the firm have any opportunity costs.

(d) Accounting profit is equal to total revenue less implicit costs.

12. With a given supply curve, a decrease in demand causes

(a) an overall decrease in price but an increase in equilibrium quantity.

(b) an overall increase in price but a decrease in equilibrium quantity.

(c) an overall decrease in price and a decrease in equilibrium quantity.

(d) no change in overall price but a reduction in equilibrium quantity.

13. It is assumed in economic theory that

(a) decision making within the firm is usually undertaken by managers, but never by the owners.

(b) the ultimate goal of the firm is to maximise profits, regardless of firm size or type of business organisation.

(c) as the firm's size increases, so do its goals.

(d) the basic decision making unit of any firm is its owners.

14. Assume that consumers' incomes and the number of sellers in the market for good A both decrease. Based upon this information we can conclude, with certainty, that equilibrium :

(a) price will increase.

(b) price will decrease.

(c) quantity will increase.

(d) quantity will decrease.

15. Suppose that the supply of cameras increases due to an increase in foreign imports. Which of the following will most likely occur?

(a) the equilibrium price of cameras will increase.

(b) the equilibrium quantity of cameras exchanged will decrease.

(c) the equilibrium price of camera film will decrease.

(d) the equilibrium quantity of camera film exchanged will increase.

16. Assume that in the market for good Z there is a simultaneous increase in demand and the quantity supplied. The result will be :

(a) an increase in equilibrium price and quantity.

(b) a decrease in equilibrium price and quantity.

(c) an increase in equilibrium quantity and uncertain effect on equilibrium price.

(d) a decrease in equilibrium price and increase in equilibrium quantity.

17. Suppose the technology for producing personal computers improves and, at the same time, individuals discover new uses for personal computers so that there is greater utilisation of personal computers. Which of the following will happen to equilibrium price and equilibrium quantity?

(a) Price will increase; quantity cannot be determined.

(b) Price will decrease; quantity cannot be determined.

(c) Quantity will increase; price cannot be determined.

(d) Quantity will decrease; price cannot be determined.

18. Which of the following is not a condition of perfect competition?

(a) A large number of firms.

(b) Perfect mobility of factors.

(c) Informative advertising to ensure that consumers have good information.

(d) Freedom of entry and exit into and out of the market.

19. Which of the following is not a characteristic of a perfectly competitive market?

(a) Large number of firms in the industry.

(b) Outputs of the firms are perfect substitutes for one another.

(c) Firms face downward-sloping demand curves.

(d) Resources are very mobile.

20. Which of the following is not a characteristic of monopolistic competition?

(a) Ease of entry into the industry.

(b) Product differentiation.

(c) A relatively large number of sellers.

(d) A homogenous product.

21. All of the following are characteristics of a monopoly except :

(a) there is a single firm.

(b) the firm is a price taker.

(c) the firm produces a unique product.

(d) the existence of some advertising.

22. Oligopolistic industries are characterized by :

(a) a few dominant firms and substantial barriers to entry.

(b) a few large firms and no entry barriers.

(c) a large number of small firms and no entry barriers.

(d) one dominant firm and low entry barriers.

23. Price-taking firms, i.e., firms that operate in a perfectly competitive market, are said to be "small" relative to the market. Which of the following best describes this smallness?

(a) The individual firm must have fewer than 10 employees.

(b) The individual firm faces a downward-sloping demand curve.

(c) The individual firm has assets of less than Rs. 20 lakh.

(d) The individual firm is unable to affect market price through its output decisions.

24. For the price-taking firm :

(a) marginal revenue is less than price.

(b) marginal revenue is equal to price.

(c) marginal revenue is greater than price.

(d) the relationship between marginal revenue and price is indeterminate.

25. Monopolistic competition differs from perfect competition primarily because

(a) in monopolistic competition, firms can differentiate their products.

(b) in perfect competition, firms can differentiate their products.

(c) in monopolistic competition, entry into the industry is blocked.

(d) in monopolistic competition, there are relatively few barriers to entry.

26. The long-run equilibrium outcomes in monopolistic competition and perfect competition are similar, because in both market structures

(a) the efficient output level will be produced in the long run.

(b) firms will be producing at minimum average cost.

(c) firms will only earn a normal profit.

(d) firms realise all economies of scale.

27. A monopolist is able to maximise his profits when :

(a) his output is maximum.

(b) he charges a high price.

(c) his average cost is minimum.

(d) his marginal cost is equal to marginal revenue.

28. In which form of the market structure is the degree of control over the price of its product by a firm very large?

(a) Monopoly

(b) Imperfect Competition

(c) Oligopoly

(d) Perfect competition

29. Which is the other name that is given to the average revenue curve?

(a) Profit Curve

(b) Demand Curve

(c) Average Cost Curve

(d) Indifference Curve

30. Under which of the following forms of market structure does a firm have no control over the price of its product?

(a) Monopoly

(b) Monopolistic competition

(c) Oligopoly

(d) Perfect competition

31. Discriminating monopoly implies that the monopolist charges different prices for his commodity :

(a) from different groups of consumers

(b) for different uses

(c) at different places

(d) any of the above.

32. Price discrimination will be profitable only if the elasticity of demand in different market in which the total market has been divided is :

(a) uniform

(b) different

(c) less

(d) zero

33. The Kinked demand hypothesis is designed to explain in the context of oligopoly

(a) Price and output determination

    (b) Price rigidity

    (c) Price leadership

    (d) Collusion among rivals.

34. The firm in a perfectly competitive market is a price taker. This designation as a price taker is based on the assumption that

    (a) the firm has some, but not complete, control over its product price.

    (b) there are so many buyers and sellers in the market that any individual firm cannot affect the market.

    (c) each firm produces a homogeneous product.

    (d) there is easy entry into or exit from the market place.

35. Suppose that the demand curve for the XYZ Co. slopes downward and to the right. We can conclude that

    (a) the firm operates in a perfectly competitive market.

    (b) the firm can sell all that it wants to at the established market price.

    (c) the XYZ Co. is not a price taker in the market because it must lower price to sell additional units of output.

    (d) the XYZ Co. will not be able to maximise profits because price and revenue are subject to change.

36. If firms in the toothpaste industry have the following market shares, which market structure would best describe the industry?

Market share	(% of market)
Toothpaste	18.7
Dentipaste	14.3
Shinibright	11.6
I can't believe its not toothpaste	9.4
Brighter than white	8.8
Pastystuff	7.4
Others	29.8

    (a) Perfect competition

    (b) Monopolistic competition

    (c) Oligopoly

    (d) Monopoly

37. The kinked demand curve model of oligopoly assumes that

   (a) response to a price increase is less than the response to a price decrease.

   (b) response to a price increase is more than the response to a price decrease.

   (c) elasticity of demand is constant regardless of whether price increases or decreases.

   (d) elasticity of demand is perfectly elastic if price increases and perfectly inelastic if price decreases.

38. A firm encounters its "shutdown point" when :

   (a) average total cost equals price at the profit-maximising level of output.

   (b) average variable cost equals price at the profit-maximising level of output.

   (c) average fixed cost equals price at the profit-maximising level of output.

   (d) marginal cost equals price at the profit-maximising level of output.

39. Suppose that, at the profit-maximizing level of output, a firm finds that market price is less than average total cost, but greater than average variable cost. Which of the following statements is correct?

   (a) The firm should shutdown in order to minimise its losses.

   (b) The firm should raise its price enough to cover its losses.

   (c) The firm should move its resources to another industry.

   (d) The firm should continue to operate in the short run in order to minimize its losses.

40. When price is less than average variable cost at the profit-maximising level of output, a firm should :

   (a) produce where marginal revenue equals marginal cost if it is operating in the short run.

   (b) produce where marginal revenue equals marginal cost if it is operating is the long run.

   (c) shutdown, since it will lose nothing in that case.

   (d) shutdown, since it cannot even cover its variable costs if it stays in business.

41. A purely competitive firm's supply schedule in the short run is determined by

   (a) its average revenue.

   (b) its marginal revenue.

   (c) its marginal utility for money curve.

   (d) its marginal cost curve.

42. One characteristic not typical of oligopolistic industry is

   (a) horizontal demand curve.

    (b) too much importance to non-price competition.

    (c) price leadership.

    (d) a small number of firms in the industry.

43. The structure of the toothpaste industry in India is best described as

    (a) perfectly competitive.

    (b) monopolistic.

    (c) monopolistically competitive.

    (d) oligopolistic.

44. The structure of the cold drink industry in India is best described as

    (a) perfectly competitive.

    (b) monopolistic.

    (c) monopolistically competitive.

    (d) oligopolistic.

45. Which of the following statements is incorrect?

    (a) Even monopolistic can earn losses.

    (b) Firms in a perfectly competitive market are price takers.

    (c) It is always beneficial for a firm in a perfectly competitive market to discriminate prices.

    (d) Kinked demand curve is related to an oligopolistic market.

46. In perfect competition in the long run there will be no _____ .

    (a) normal profits

    (b) supernormal profits.

    (c) production

    (d) costs.

47. When _____ , we know that the firms are earning just normal profits.

    (a) AC = AR

    (b) MC = MR

    (c) MC = AC

    (d) AR = MR

48. When _____ , we know that the firms must be producing at the minimum point of the average cost curve and so there will be productive efficiency.

    (a) AC = AR

(b) MC = AC

(c) MC = MR

(d) AR = MR

49. When _____ , there will be allocative efficiency meaning thereby that the cost of the last unit is exactly equal to the price consumers are willing to pay for it and so that the right goods are being sold to the right people at the right price.

(a) MC = MR

(b) MC = AC

(c) MC = AR

(d) AR = MR

50. Agricultural goods markets depict characteristics close to

(a) perfect competition.

(b) oligopoly.

(c) monopoly.

(d) monopolistic Competition.

51. Which of the following is not a characteristic of a competitive market?

a. There are many buyers and sellers in the market.

b. The goods offered for sales are largely the same.

c. Firms generate small but positive super normal profits in the long run.

d. Firms can freely enter or exit the market.

52. Which of the following markets would most closely satisfy the requirements for a perfectly competitive market?

a. Electricity

b. Cable television

c. Cola

d. Milk

53. The competitive firm maximizes profit when it produces output up to the point where

a. price equals average variable cost

b. marginal revenue equals average revenue

c. marginal cost equals total revenue

d. marginal cost equals marginal revenue

54. The market for hand tools (such as hammers and screwdrivers) is dominated by Draper, Stanley, and Craftsman. This market is best described as

a. Monopolistically competitive

    b.   a monopoly

    c.   an oligopoly

    d.   perfectly competitive

55. A market structure in which many firms sell products that are similar but not identical is known as

    a.   monopolistic competition

    b.   monopoly

    c.   perfect competition

    d.   oligopoly

56. When an oligopolist individually chooses its level of production to maximize its profits, it charges a price that is

    a.   more than the price charged by either monopoly or a competitive market

    b.   less than the price charged by either monopoly or a competitive market

    c.   more than the price charged by a monopoly and less than the price charged by a competitive market

    d.   less then the price charged by a monopoly and more than the price charged by a competitive market.

57. In the long-run equilibrium of a competitive market, firms operate at

    a.   the intersection of the marginal cost and marginal revenue

    b.   their efficient scale

    c.   zero economic profit

    d.   all of these answers are correct

58. Which of the following is not a characteristic of a monopolistically competitive market?

    a.   Free entry and exit

    b.   Abnormal profits in the longrun

    c.   Many sellers

    d.   Differentiated products

59. In a very short period market :

    a.   the supply is fixed

    b.   the demand is fixed

    c.   demand and supply are fixed

    d.   none of the above

60. Time element was conceived by

    a.   Adam Smith

    b.   Alfred Marshall

c. Pigou

d. Lionel Robinson

61. Total revenue =

a. price ×quantity

b. price × income

c. income ×quantity

d. none of the above

62. Average revenue is the revenue earned

a. per unit of input

b. per unit of output

c. different units of input

d. different units of output

63. AR can be symbolically written as:

a. MR / Q

b. price × quantity

c. TR / Q

d. none of the above

64. AR is also known as:

a. price

b. income

c. revenue

d. none of the above

65. Marginal revenue can be defined as the change in total revenue resulting from the:

a. purchase of an additional unit of a commodity

b. sales of an additional unit of a commodity

c. sale of subsequent units of a product

d. none of the above

66. When e > 1 then MR is

a. zero

b. negative

c. positive

d. one

67. When e = 1 then MR is

a. positive

b. zero

c. one

d. negative

68. When e < 1 then MR is

   a. negative

   b. zero

   c. positive

   d. one

69. The term market refers to a:

   a. place where buyer and seller bargain a product or service for a price

   b. place where buyer does not bargain

   c. place where seller does not bargain

   d. none of the above

70. In perfect competition firm is the —————————

   a. price maker and not price taker

   b. price taker and not price maker

   c. neither price maker nor price taker

   d. none of the above

71. A Monopolist is the price

   a. maker

   b. taker

   c. adjuster

   d. none of the above

72. Price discrimination is one of the features of —-

   a. monopolistic competition

   b. monopoly

   c. perfect competition

   d. oligopoly

73. Under monopoly, degree of control over price is:

   a. none

   b. some

   c. very considerable

   d. none of the above
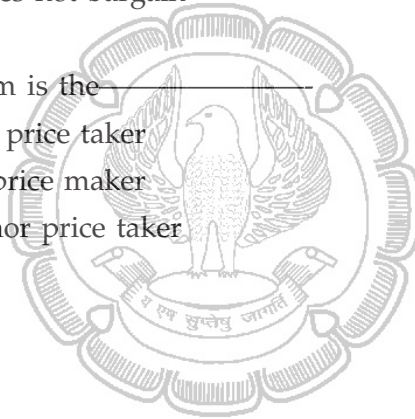
74. Generally, market for perishable like butter, eggs, milk, vegetables etc., will have
    a. regional market
    b. local market
    c. national market
    d. none of the above

75. Durable goods and industrial items exist in
    a. local market
    b. regional market
    c. national market
    d. secular market

76. Secular period is also known as
    a. very short period
    b. short period
    c. very long period
    d. long period

77. Stock exchange market is the example for
    a. unregulated market
    b. regulated market
    c. spot market
    d. none of the above

78. The market for the ultimate consumers is known as
    a. whole sale market
    b. regulated market
    c. unregulated market
    d. retail market

79. The condition for pure competition is
    a. large number of buyer and seller, free entry and exist
    b. homogenous product
    c. both (a) and (b)
    d. large number of buyer and seller, homogenous product, perfect knowledge about the product
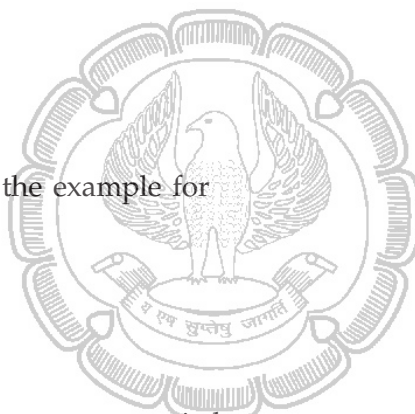
80. Pure oligopoly is based on the——————————— products
    a. differentiated
    b. homogeneous
    c. unrelated
    d. none of the above

81. In oligopoly, when the industry is dominated by one large firm which is considered as leader of the group. This is called:
    a. full oligopoly
    b. collusive oligopoly
    c. partial oligopoly
    d. syndicated oligopoly

82. When the product are sold through a centralized body oligopoly is know as
    a. organized oligopoly
    b. partial oligopoly
    c. competitive oligopoly
    d. syndicated oligopoly

83. When the monopolist divides the consumers into separate sub markets and charges different prices in different sub-markets it is known as
    a. first degree of price discrimination
    b. second degree of price discrimination
    c. third degree of price discrimination
    d. none of the above.

84. Under ————————————— the monopolist will fix a price which will take away the entire consumers' surplus.
    a. second degree of price discrimination
    b. first degree of price discrimination
    c. third degree of price discrimination
    d. none of the above.

85. Price discrimination is related to
    a. time
    b. size of the purchase
    c. income
    d. any of the above

ANSWERS

1.	c	2.	c	3.	c	4.	d	5.	c	6.	a
7.	d	8.	a	9.	b	10.	c	11.	.d	12.	c
13.	b	14.	d	15.	d	16.	c	17.	c	18.	c
19.	c	20.	d	21.	b	22.	a	23.	d	24.	b
25.	a	26.	c	27.	d	28.	a	29.	b	30.	d
31.	d	32.	b	33.	b	34.	b	35.	c	36.	c
37.	a	38.	b	39.	d	40.	d	41.	d	42.	a
43.	c	44.	d	45.	c	46.	b	47.	a	48.	b
49	c	50.	a	51.	c.	52.	d	53.	d	54.	c
55.	a	56.	d	57.	d	58.	b	59.	a	60.	b
61.	a	62.	b	63.	c	64.	a	65.	b	66.	c
67.	b	68.	a	69.	a	70.	b	71.	a	72.	b
73.	c	74.	b	75.	c	76.	c	77.	b	78.	d
79.	c	80.	b	81.	c	82.	d	83.	c	84	b
85.	d										