

UNIT-IV: MARKET STRUCTURE **PERFECT COMPETITION**

1. What is perfect competition?

Ans:- Meaning of perfect competition:- Perfect competition refers to a market situation in which there are very large no. of buyers & sellers of homogeneous products. The price of the product is determined by industry with the forces of demand & supply. A seller is a price taker who should be selling the product at the market determined uniform price. The seller cannot change the price prevailing in the market. Like a seller a buyer also cannot influence the market price by his own action.

2. Characteristics/ Assumptions/ Conditions/ Features/ natures?

Ans:- (1) Very large No. of buyers & sellers:- Under perfect competition, the number of buyers & sellers are so large that the demand of an individual buyer is only a small fraction of the market (total demand for a commodity). Likewise, the number of seller is so large that the supply of an individual seller (firm) is only a small fraction of the market supply.

(2) Homogeneous product:- Under perfect competition each seller in the industry sells a homogeneous product. A product is said to be homogeneous when each unit of it sold, inequality, colour, weight or any other respect. It is a situation of zero degree of product of all firms are perfect substitute of each other.

(3) Freedom of entry & Exit of firms:- Under perfect competition, there is absolutely no restriction on entry of new firms into the industry or exit of loss incurring firms from the industry. Entry & exit of the firms is possible only in the short period, not in the long period.

(4) Perfect knowledge:- under perfect competition both the buyers & sellers have perfect knowledge about the price & other market conditions. This knowledge refers not only to the prevailing condition in the current period but in all future periods as well.

(5) Absence of transportation cost:- As there is absence of transportation cost due to close touch between the buyers & sellers. The price of the production under perfect competition is not affected by the cost of transportation of goods.

(6) Single uniform price:- Under PC, the products are sold in the market in single uniform price. The price is fixed by the industry which is determined by the forces of market demand & supply. Price may fluctuate in the market but the rate will be uniform.

(7) No. Govt. Intervention:- There is no govt. interference in a perfectly competitive market. Govt. neither imposes any tax nor gives any subsidy to the producers.

(8) Perfect mobility:- Under PC, there is perfect mobility in the market both for goods & factors of production. There is no restriction on their movement.

3. Explain the determination of market equilibrium under perfect competition

OR

Explain diagrammatically how an industry attains equilibrium under perfect competition

OR

Explain how equilibrium price & output are determined under perfect competition.

Ans:- Under perfect competition price is determined by the forces of market demand & market supply.

Market demand refers to the sum total of demand for a commodity for all the buyers in the market. It is indicated by market demand schedule & market demand curve.

Market supply curve refers to the sum total of supply of a commodity by all the firms in the market. It is indicated by market supply schedule & market supply curve.

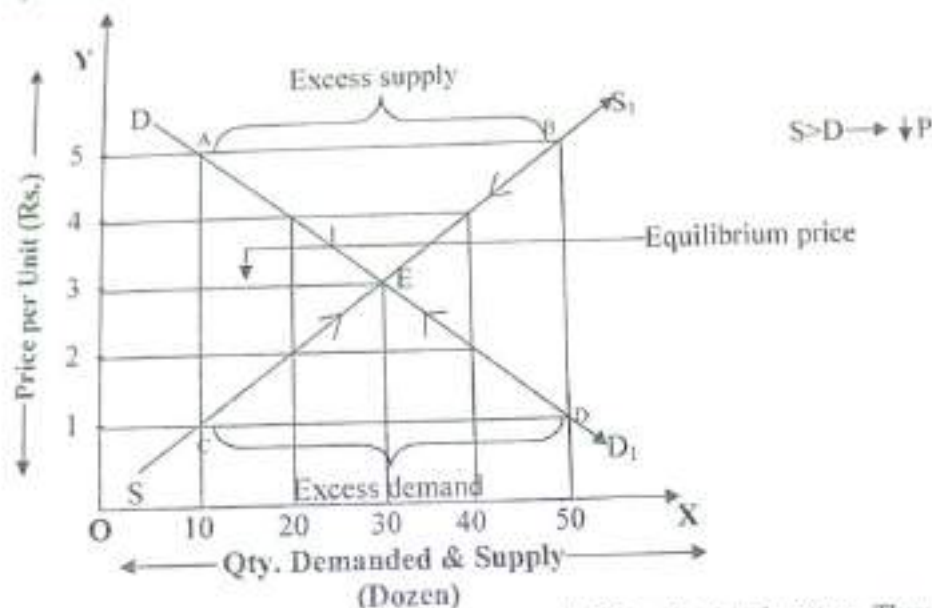
Market equilibrium is stuck (attain) at the prevailing price in the market, quantity demanded is equal to quantity supplied. There is no excess demand or excess supply in the market.

Tabular & diagrammatical Explanation:- The following hypothetical schedule & diagram illustrate the situation of market demand.

Price of Commodity X (In Rs.)	Quantity supplied (Dozen)	Quantity Demanded (Dozen)	Remarks
5	50	10	$Q_s > Q_d$ Excess supply
4	40	20	
3	30	30	
2	20	40	$Q_s = Q_d$ market equilibrium
1	10	50	
			$Q_d > Q_s$ Excess demand

The above schedule shows that when the price of commodity X is Rs. 5, market supply is 50 dozen and market demand is 10 dozen. It is a situation of excess supply. Pressure of excess supply reduces the market price. Supposing, the price reduces from Rs.5 to Rs.4. Reduction in the price of the commodity leads to a rise in quantity demanded but a fall in qty supplied. Consequently, quantity demanded increase to 20 dozen where quantity supplied decreases to 40 dozen. Even at this price market is not clear. Market demand is less than market supply. Pressure of excess supply still exists in the market which will lead to further reduction in market price. Supposing it reduces to

Rs.3 per dozen. Now quantity demanded increases to 30 dozen while quantity supply decreases to 30 dozen. Thus, when $p_s = 3$, $Q_d = Q_s$. The market clears itself. Accordingly Rs.3 is the equilibrium price & 30 dozen is the equilibrium quantity. There is no excess demand or excess supply in the market. If price falls below the equilibrium price $Q_d > Q_s$. This will exert upward pressure on price & consequently market equilibrium is restored. The above schedule is depicted below:-



In the above diagram, DD_1 is the demand curve and SS_1 is the supply curve. They intersect each other at point E. Where market demand is equal to market supply. Thus, point E is the equilibrium point which shows that equilibrium price is Rs. 3 and equilibrium quantity is 30 dozens. If initially price happens to be Rs. 4, then market supply, i.e. 40 dozen, exceeds market demand, i.e. 20 dozen. This is a situation of excess supply which is equal to AB in the above figure. Pressure of excess supply leads to reduction in market price. In response to it, quantity supplied tends to fall and quantity demanded tends to rise. Fall in quantity supplied is indicated by a movement along the supply curve from B towards E. Rise in quantity demand is indicated by a movement along the demand curve from A to E. It is at point E, that the excess supply is finally eliminated. Now, quantity demanded and quantity supply = 30 dozens. Corresponding to this equilibrium quantity, Equilibrium price is Rs. 3. The market is cleared likewise. If initially price happens to be Rs. 2, then market supply, i.e. 30 dozen. This is a situation of excess demand. Equal to CD in the above figure. Pressure of excess demand will lead to a rise in market price. In response to it, quantity supplied tends to rise. Rise in quantity demanded is indicated by a movement along the demand curve from D towards E. Rise in quantity supplied curve from C towards E. It is at point E, that the excess demand is finally eliminated. Now, quantity demanded = quantity supplied = 30 dozen & equilibrium price is Rs.3. The market is cleared.

Assumptions:-

Market equilibrium under perfect competition is based on the following assumptions:-

- (1) Price & quantity demanded are negatively related or that demand curve of a commodity slopes downward from left to right
- (2) Price & quantity supplied are positively related or that supply curve of a commodity slopes upward from left to right.
- (3) Forces of demand & supply operate freely without any govt. Intervention.

4. Explain how market price is determined under perfect competition? OR

Explain Price-output determination of a firm under perfect competition in the very short period? OR

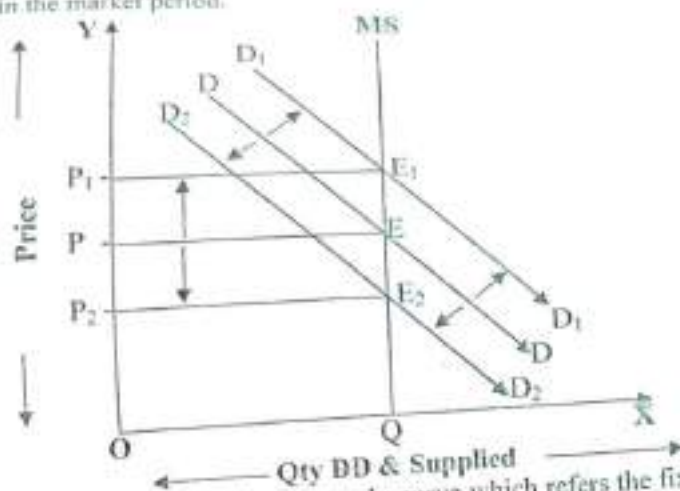
Explain equilibrium of a firm under perfect competition in the very short period

Ans:-Market period is the very short period in which supply being fixed, price is determined by demand. The price prevailing in the market period is called the market price which changes with the nature of the commodity, many times within a day or a week or a month market price is determined by the forces of demand and supply at a point of time. The determination of market price is separately explained for perishable & durable commodities.

Perishable commodities:- The price of perishable commodities like milk, vegetable, fish etc. primarily influenced by its demand. Supply has no influence on price because it is fixed. The shape of supply curve here is perpendicular to quantity axis, as perishable goods cannot be stored. Therefore, the price of a perishable commodities rises with the rise in its demand and falls with the fall in its demand.

Diagrammatical Explanation

The following diagram illustrates the price determination of a perishable commodity under perfect competition in the market period.



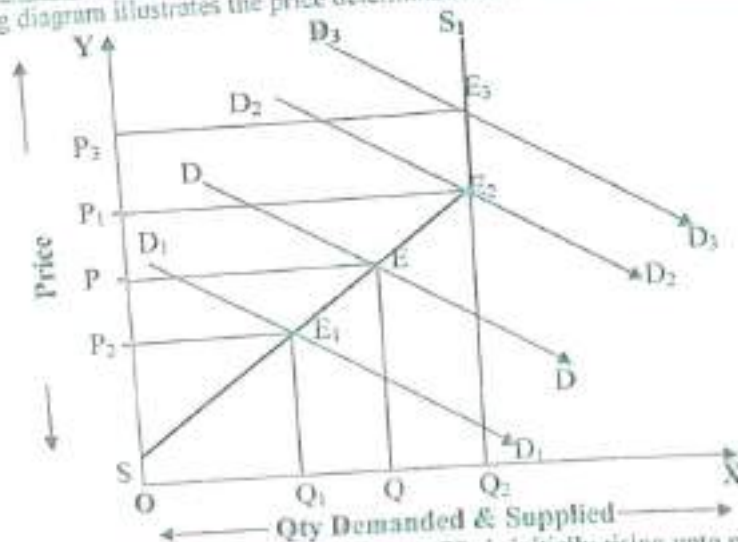
In the above figure, MS is the supply curve which refers the fixed quantity of milk. DD is the initial demand curve which intersects the supply curve MS at point "E". Thus, OP market price is determined. If the demand for milk rises from DD to D₁, the market price is established at point E₁ and the price rises to OP₁. Again, if demand for milk falls from DD to D₂, price also falls to OP₂ at point E₂. Thus, it is clear that market price is determined by demand force alone with the fixed supply of a perishable commodity.

Durable Commodities:- In case of durable commodities like tea, sugar, wheat, etc supply can be adjusted depending on the amount of stock. In case of such commodities, there are two prices viz., the reserve price and the minimum price below which a firm will not sell its commodity. The price at which the seller will be prepared to sell the entire quantity of the commodity is known as the maximum price.

In case of durable commodities, the supply of the commodities initially increases at a very slow rate & then becomes inelastic.

Diagrammatical Explanation:-

The following diagram illustrates the price determination of a durable commodity under PC:-



In the above figure, the supply curve SS₁ is initially rising upto point E₂, it is not possible for the seller to increase the supply to match any increase in demand. In the figure, OS is the minimum or reserve price below which the seller does not sell the commodity. When the demand curve DD intersects the supply curve SS₁ at point E, OP price is determined at which he sells OQ quantity of the commodity & keeps QQ₂ in stock. If the demand is D₁, the price is OP₁ at which he sells OQ₁ quantity & keeps Q₁Q₂ in stock. It is only when the demand increases to D₂, the seller would be prepared to sell the entire stock. Of his commodity at the maximum price of OP₂. If the demand rises beyond D₂, it will only raise the price above OP₂ (maximum price) because in the market period not more than OQ₂ quantity can be sold. Any further increase in demand as shown by D₃ leads to a steep rise in its price to OP₃.

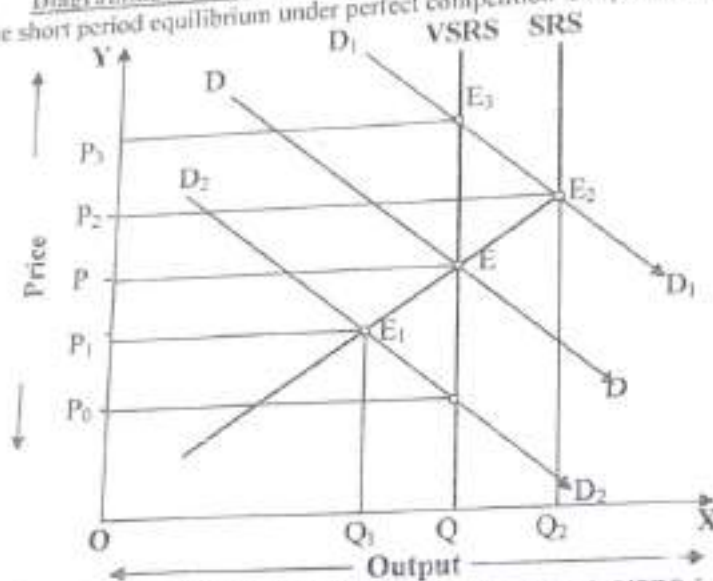
Thus, it is clear that in the market period demand has a greater influence than supply in price determination because the seller does not consider production cost.

5. Explain how sub-normal price is determined under perfect competition. OR
 Explain price-output determination in the short period under perfect competition. OR
 Explain equilibrium of a firm under perfect competition in the short run period.

Ans:- During the short period, a firm under perfect competition can change the supply of the commodity by taking more variable factors in production. In the short period, it is not possible to change the fixed factor like plant, machines, etc. But by employing more labourers, raw-materials, etc., supply can be increased to some extent to match the increased demand. Supply can be decreased also by reducing the amount of variable factors to match with the decrease in demand. Thus, the supply of the commodity is to some extent elastic. In such a period, price is determined by the forces of demand and supply.

Diagrammatical explanation:-

The short period equilibrium under perfect competition is explained below diagrammatically.



In the above diagram, DD is the original demand curve & VSRS is the very short run period supply curve. Both the curves intersect each other at point 'E' & establish price OP & output OQ. The original demand curve also intersects the short run supply curve SRS at point 'E' OP price & OQ output are established.

When demand rises from DD to D₁ D₁, the market price rises from OP to OP₃. Since supply is fixed in the market period it is not possible to increase it beyond OQ level. But it is possible to increase it with the help of existing plant & machines but by employing more labourers, raw-materials etc in the short run period. Thus in the short run period, supply will be increased to OQ₂ along the SRS curve. The SRS curve intersects the new demand curve at point E₂. In this way, short run price OP₂ is determined which is higher than the original market price OP but lower than the market price OP₃ which prevails after the increased demand.

With fall in demand the demand curve shifts leftward as D₂ D₂. The market Price immediately falls from OP to OP₁. But during the short period, firms in the industry will try to reduce the supply by reducing the variable factors. The new equilibrium in the short run is established at point E₁ where the curve SRS & D₂ D₂ intersects. Now, OQ₁ quantity is bought and sold at OP₁ price. This short run price is less than the original market price OP but it is higher than the new market price OP which is established after fall in demand.

6. Explain how normal price is determined under PC. OR
 Explain price output determination under long period under perfect. OR
 Explain equilibrium under perfect competition in the long run.

Ans:- Long run is the time period in which the producers have enough time to take decision about demand and supply. Supply can be fully adjusted to the changes in demand. In such period, all the factors are variable and none is fixed. In the long period, if the existing firms are earning super normal profits, new firms are attracted to enter into the industry. It will increase the industry supply, thus, price will fall. Similarly if the firms incur loss, firms will start leaving the industry. It will reduce the supply of output & price will increase. In this way, due to free entry and exit of the firms in the long run, all firms earn normal profit.

The long run industry price is determined by the interaction of active demand curve as well as active supply curve as shown in the following diagram:-

The following diagram illustrates the price determination of durable commodities under PC:-

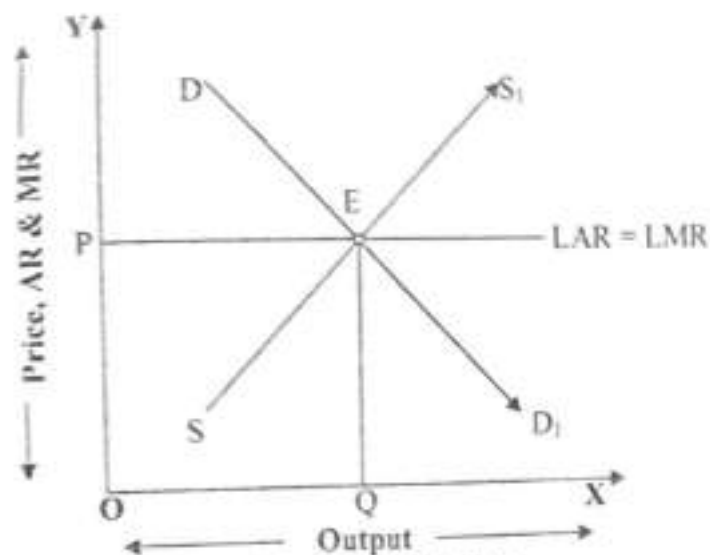


Fig. Industry Equilibrium

In the above diagram, the industry equilibrium point is 'E' where the industry equilibrium output is OQ & equilibrium price is OP.

The equilibrium position of the firms in the long run period is explained below with the help of the following diagram:-

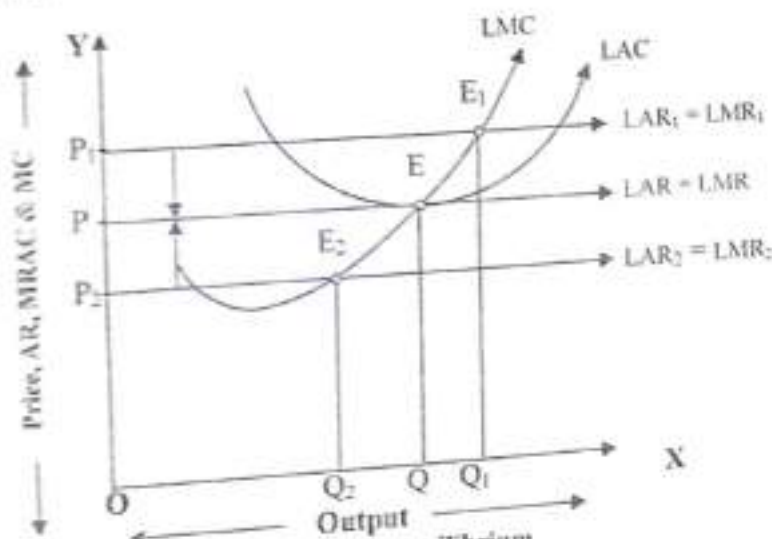


Fig. Firms long run equilibrium

In the above diagram, the firms cannot be equilibrium at point E_1 because though the price OP_1 equals LMC at E_1 at output OQ_1 it is greater than the average cost & therefore the firms will be earning super normal profits. Hence, there will be incentives for new firm to enter into the industry as a result, the price will be forced to the level OP with which price, the firms are in equilibrium at point E and is producing OQ output. At point E , the price OP is equal to average cost (LAC) & hence the firm will be earning normal profits. Thus at price OP , there will be no tendency of new firms to enter into the industry.

A firm under PC in the long run cannot be equilibrium at point E_2 through at point E_2 Price OP_2 will be equal to LMC at output OQ_2 price OP_2 is lower than the average cost (LAC) at point E_2 and thus the firms will be remaining losses as all the firms in the industry are identical with respect to cost curves, all would be incurring losses. To avoid these losses, the firms will start leaving the industry. As a result the price will rise to OP where again all firms are making normal profit. After reaching OP price, the firms would have no tendency to exit.

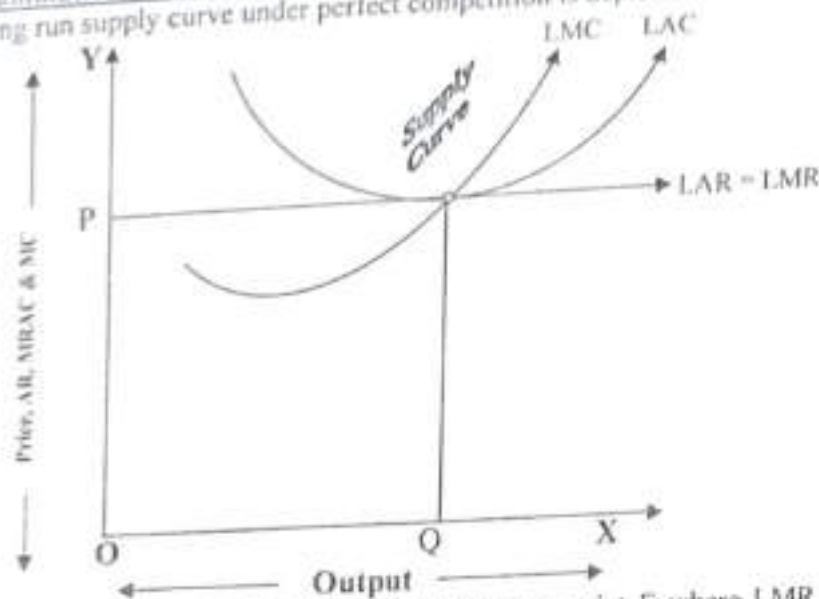
Therefore, it is seen that at equilibrium point E , Price = $LAR = LMR = LAC = LMC$.

7. Explain the long run supply curve of a firm under perfect competition?

Ans:- Long run is a time period in which supply can be changed by changing all the factors of production. There is no distinction between fixed and variable factors because all the factors are made variable. In the long run, a firm produces only at minimum average cost. In this situation long run marginal cost, marginal revenue, average revenue and long run average cost are equal revenue and long run average cost are equal, i.e. $LMC = LMR = LAR = LAC$. The firm is enjoying only normal profits. So that position of marginal cost curve will determine the supply curve which is above the minimum average variable cost. The point which minimum average cost is equal to marginal cost is called optimum production. Thus, long run supply curve of a firm under perfect competition is that portion of its marginal cost curve that lies above the minimum point of the average cost curve.

Diagrammatical explanation:-

The long-run supply curve under perfect competition is depicted below:-



In the above figure, the firm is in equilibrium at point E where $LMR = LMC$. Average cost is minimum corresponding to this point. This point 'E' is also called optimum point because at this point, $LMR = LMC = LAR = LAC$. That portion of LMC which is above E is the long run supply curve of the competitive firm.

8. Explain the long run supply curve of an industry under perfect competition.

Ans:- In the long run, an industry's supply curve is determined by the supply curves of firms in the long run. Long run supply curve is the lateral summation of the short run supply curves. Industry's long run supply curve depends upon the change in the optimum size of firms and change in the no. of firms. It is on account of two reasons -

- (1) In the long run, firms continue to enter into and exit from the industry and
- (2) Firms get economies and diseconomies of scale. This displaces the long run marginal cost (LMC). Due to these reasons long run supply curve of an industry is not the lateral summation of supply curve of firms. In reality, long run supply curve of an industry can be known from the long run optimum production of firms multiplied by the no. of firms in an industry. Symbolically,

$$LRS_i = (Q) \cdot N \text{ where, } LRS = \text{Long run supply curve of the industry.}$$

Q = The optimum output of a firm &
 N = No. Of firms

9. Explain the impacts of taxes on welfare?

Ans: The welfare effect of the tax is examined on the basis of its effect on consumption and production, consumer and producer's surplus and the deadweight loss of its causes. These effect of a tax are examined by applying a partial equilibrium model of demand and supply. The welfare effect of excise tax will be examined here. For the purpose of analytical simplicity, we assume that a specific rate of excise tax is imposed on a commodity. The welfare effect of excise tax is illustrated with the help of the following figure:-

The following diagram illustrates the price determination of durable commodities under PC:-

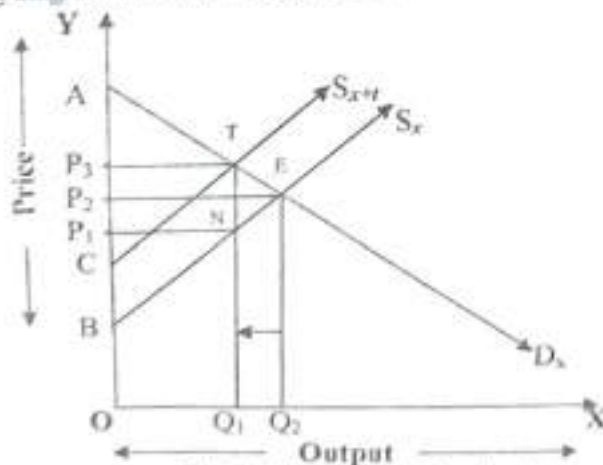


Fig. Welfare effect of excise tax

Let us suppose that there is no excise tax and the demand curve for the commodity X is given by AD_x and its supply curve by BS_x . Give the demand and supply curves for commodity X, the equilibrium output for the industry X is determined as OQ_2 and equilibrium price is OP_2 . In the absence of tax, the consumer's surplus is given by the area

AP₂E and producer's surplus by the area P₂EB. Both consumers and producers enjoy maximum surplus and total output is maximised. Under this conditions, social welfare is maximised.

Now let excise tax be imposed at specific rate of TM. With the imposition of excise tax, supply cost increase and hence supply curve shifts upward from BS₁ to CS₂. With the shift in the supply curve, the equilibrium point shifts from point 'E' to point 'T'. The shift in the equilibrium point indicates decrease in output from OQ₂ to OQ₁ & increase in price from OP₂ to OP₃. Due to increase in price of commodity X, both consumers lose a part of their surplus. Consumers lose a part of their surplus as their consumption decrease. The loss of consumer surplus can be measured as follows:

$$AEP_2 - ATP_3 = P_3TEP_2$$

And, due to decrease in production and in post tax price, production also lose a part of their surplus measured as follows:

$$P_2EB - P_1MB = P_2EMP_1$$

The total loss of surplus can be measured as $P_3TEP_2 + P_2EMP_1 = P_3TEMP_1$. However, a major part of the lost consumer and producer surplus goes to the govt. in the part of revenue. The part of consumer surplus and producer surplus that goes to the govt. can be measured as follows -

$$\text{Govt. revenue} = P_3TMP_2 + P_3NMP_2 + P_2NMP_1 = P_3TMP_1$$

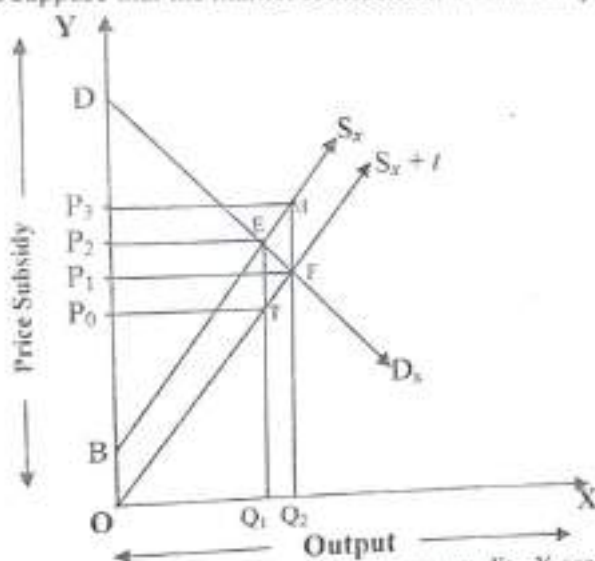
This amount gives the total amount of tax paid to govt. it implies that the consumer surplus and producer surplus lost go to the govt. in the form of tax revenue. Since the govt. is also a part of the society the society does not suffer a total loss of consumer and producer due to imposition of excise tax.

Although a major part of lost consumer and producer surplus get converted into govt. revenue, there is still a welfare loss to the society. It is to be noted that a loss of consumer surplus to the extent of ENM do not benefit any section of the society. This is called the deadweight loss, which equals. $TNE + ENM = TNME$ is the welfare loss to the society.

10) Explain the welfare effect of subsidies?

Ans: subsidy is the part of price paid by the govt to benefit the consumers. For e.g. the govt of india provides subsidy to the Farmers on purchase of fertilizers. Subsidy is the reverse of tax. Subsidy may be provided at specific rate. Here we will examine the welfare effect of subsidy provided by the govt at a specific rate.

Let us suppose that the market considers for a commodity X without subsidy are given in the following figure.



The demand and supply curves for the commodity X are given by D_s and S_x respectively the D_s & S_x curves intersect each other at point 'E' determining the equilibrium price at EQ_1 & equilibrium output OQ_1 . In the absence of any subsidy, the market equilibrium is supposed to be stable.

Now let us suppose that the govt. provides a specific subsidy equal to the amount ET to the producers of the commodity X. With the provision of subsidy, the supply price of commodity X goes down by the amount of subsidy. As a result, the supply curve S_x shifts right wards to $S_x + t$ ($S =$ subsidy). With the shift in the supply curve market equilibrium shifts from point 'E' to point 'F'.

Let us now examine the welfare effect of subsidy. The welfare effect of subsidy can be examined on the basis of change in consumer's surplus and in producer's surplus and the dead weight loss of subsidy.

Change in consumer's surplus:

$$\text{Consumer's surplus without subsidy} = DEP_2$$

$$\text{Consumer's surplus with subsidy} = DFP_1$$

Note that the area of DFP_1 is greater than the area DEP_2 . It means that the consumer gain in terms of consumer's surplus.

$$\text{Net consumer's surplus gain} = DFP_1 - DEP_2$$

$$- P_2 EFP_1$$

Change in producer's surplus:

Producer's surplus without subsidy = $P_2 ED$

Producer's surplus with subsidy = $P_1 FO$

Note that the area of $P_1 FO$ is greater than the area of $P_2 EB$. It means that the producer gains in terms of producer's surplus.

$$\text{Net producer's surplus gain} = P_1 FO - P_2 EB \\ = P_1 FTP_0$$

The measurement of consumer's surplus and producer's surplus shows that both consumer's and producers make a net gain in terms of their surplus from subsidy. This gives the overall welfare gains of subsidy. The overall welfare effect of subsidy can be measure as the sum of the net gains of consumer's and producer surplus

Welfare effect of subsidy = Net consumer's

$$\text{Surplus} + \text{net producer's surplus} = P_2 EFP_1 + P_1 FTP_0 \\ = P_2 EFTP_0$$

The deadweight loss: inspite of a considerable welfare gains of subsidy, it involves a deadweight loss like excise tax. The deadweight loss can be measured as the difference between the total monetary cost of subsidy and net gains to consumer's and producer's. the total amount of subsidy equals per unit subsidy ($MF = ET$) multiplied by total output OQ_2 . Since $OQ_2 = P_1 F$, the total amount of subsidy can be measured as follows:

$$\text{Monetary cost of subsidy} = P_1 F \times MF \\ = P_1 P$$

$$\text{Deadweight loss} = \text{subsidy cost area} - \text{total net surplus gain area} \\ = \text{area } P_2 EFP_1 - \text{Area } P_2 MEFP_1 \\ = \text{Area } MEF$$

The MEF part of subsidy doesnot benefit anybody. Therefore, the area MEF is treated as deadweight loss to the society.

11) Explain producer's surplus under perfect competition?

Or

Explain how producer's surplus is measured under perfect competition?

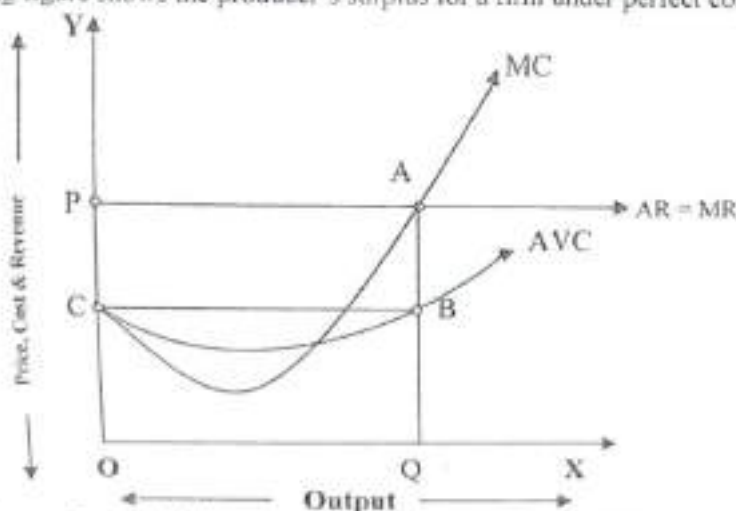
Ans: producer's surplus is defined as the difference between. What a producer actually receives, i.e, market price, for a product and the producer's minimum supply price, i.e, marginal cost for that product.

Meaning producer's surplus in the short run of a firm under perfect competition:

The producer's surplus is the excess of money receipts of a producer over the minimum supply price at which he is willing to sell rather forgo, the sale. It is obtained by the area below the market price and above the MC of production, of a given level of output. It is to be noted that the short run supply curve is the portion of the short run marginal cost curve above the short run average variable cost curve.

Diagrammatical explanation:

The following figure shows the producer's surplus for a firm under perfect competition.



The profit maximising output is OQ where $P=MC$. Price being OP and equilibrium output OQ, the producer's surplus under the given cost and revenue conditions will be PAD. It is the area under the demand curve and above the MC curve, from O output to the profit maximising output Q.

Producer's surplus can also be determined as the difference between the firms total revenue (TR) and total variable cost (TVC). In other words producer's surplus is equal to PABQ, calculated as the difference between OPAQ (TR) - OCBQ (TVC).

It is to be noted that producer's surplus is not equal to profit while producer's surplus is calculated by subtracting only variable cost from revenue, profit is measured by subtracting both variable costs as well as fixed costs (TC) from total revenue (TR). In other words, producer's surplus = $TR - TVC$ and profit = $TR - TC$ ($TFC + TVC$). Thus, in the short run, producer's surplus is always greater than profit.

12) Explain Walrasian and Marshallian stability analysis?

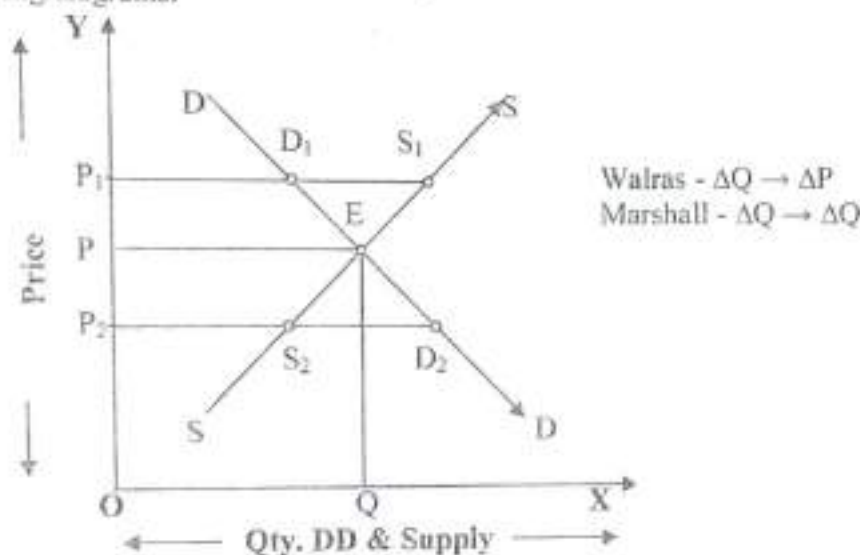
Ans: In the Walrasian approach, equilibrium is defined by the price which equates quantity demanded and quantity supplied. It is assumed that whenever there is excess demand, the buyers will bid up the price & in the case of excess supply, the sellers will lower the price. Thus, the market will be in a stable equilibrium situation in the intersecting point between a downward sloping demand curve and an upward rising supply curve. In contrast, Marshall defines equilibrium as the quantity which equates demand price with supply price. Thus, while the Walrasian adjustment process works through price movements, the Marshallian adjustment process works through quantity movements.

Hence, we find the following difference between Walrasian and Marshallian stability:

1) In Marshall's view quantities respond to change in price, while Walras considers prices to be responding to changes in quantities.

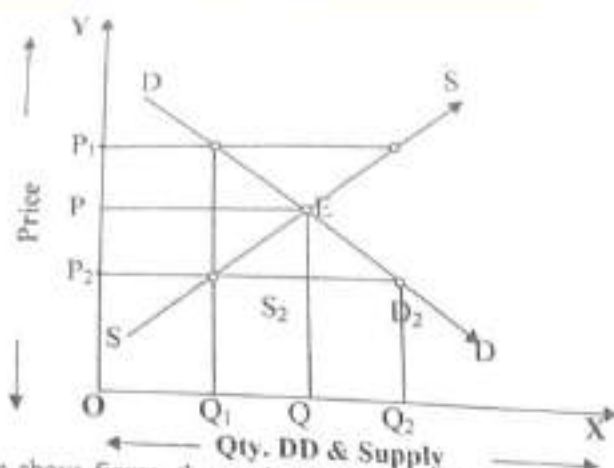
2) Walrasian stability is based on a short run response while Marshallian stability is based on a long run response.

Walrasian approach to stability: - The Walrasian adjustment mechanism can be illustrated with the help of the following diagrams:



In the above diagram, the demand curve DD and supply curve SS intersect at point 'E', thus, the equilibrium price is OP. For prices greater than OP, supply exceeds demand leading to creation of excess supply which in turn pushes the price downward till it reaches OP level. For e.g. at the price OP_1 , market demand is P_1D_1 and market supply is P_1S_1 . Here, supply is in excess of demand by D_1S_1 . Now, the sellers will be able to dispose off the excess supply only by reducing price. The process will continue until the price returns to OP level. Again, at prices lower than OP, demand is greater than supply leading to excess demand which, in turn, creates continuous upward pressure until it returns to OP level. At prices lower than equilibrium prices, the increasing competition among buyers will cause prices to move up until it returns to the equilibrium price. Here, the equilibrium price is represented by point 'E' is a stable equilibrium according to the Walrasian adjustment process in case of normal demand and supply conditions will ensure stability.

Marshallian approach to stability: the Marshallian adjustment mechanism can be illustrated with the help of the following diagram:



In the above figure, the market is in equilibrium at point 'E' with demand curve DD and supply curve SS and market price is OP. for any quantity less than OQ, demand price is greater than supply price. This will encourage firms to expand output until the quantity returns to OQ. Similarly, at quantities greater than OQ, demand price will be lower than supply price which in turns, push the firms to cut down output and getting the market clearing output back to OQ. Thus, if the demand curve is down ward sloping, while the supply curve is upward raising then the equilibrium is a stable equilibrium.

There is no conflict between Walrasian and Marshallian approaches when the demand curve is downward sloping and the supply curve is upward rising. The only difference between the two approaches is that while in the walrasian approach it is assumed that the price level changes when the market is out of equilibrium but in the Marshallian approach, it is assumed that the quantity of output changes when the market is out of equilibrium.

Short questions:

1) What is indifference curve?

Ans: An indifference curve is the locus of all combination of two goods which yield the same level of satisfaction to the consumer.

Or

2) What is an indifference map?

Ans: Given.

3) Write two assumptions of indifference curve?

4) Write two properties of indifference curve?

5) What is an axiom?

Ans: A statement or proposition which is regarded as being established, accepted or self evidently true.

6) What is ordinal utility analysis?

Ans: Ranking or ordering scale of preference is called ordinary or ordinality analysis.

7) What is cardinality/cardinal utility analysis?

Ans: Measuring the utility levels numerically is called cardinality/ cardinal utility analysis.

8) Why is an indifference curve downward sloping?

Ans: An indifference curve is downward sloping from left to right because when a consumer moves from one bundle to another along the indifference curve, one commodity say X is increased, another commodity say Y is sacrificed to derive the same level of satisfaction.

9) Why is an indifference curve convex in shape?

Ans: An indifference curve is convex to the point of origin of axes because when the consumer substitutes goods X for goods Y, the marginal rate of substitution diminishes.

10) Why two indifference curves can not intersect each other?

Ans: Two indifference curves cannot intersect each other because if two indifference curves intersect it implies that in one situation, two bundles imply same satisfaction and in another situation these imply different satisfaction levels.

11) Why an indifference curve cannot touch the axes?

Ans: An indifference curve must not touch either X axis or Y axis because touching of either axis means that the consumer will have to consume only one commodity but in the indifference curve technique, it is assumed that the consumer consumes a bundle of two commodities.

12) Write two conditions of consumer equilibrium as per the indifference curve techniques?

Ans: 1) Conditions of tangency.

2) Condition of convexity.

13) What is an engel curve? (Given earlier)

14) Who propounded the revealed preference theory?

Ans: Prof. Paul A. samuelson.

15) State the revealed preference axiom?

Ans: The revealed preference implies that given the budgetary constraint and alternative basket of goods having the same price if a consumer chooses a particular basket, he reveals his preference.

16) Write two assumptions of revealed preference theory?

- Ans: 1) Rationality.
2) choice reveals preference.

17) What is the shape of engel curve of an inferior goods?

Ans: The engel curve for an inferior goods slopes downward.

18) What is the shape of an engel curve?

Ans: upward.

20) What is perfect competition?

21) Write two assumptions (features) of P.C?

22) Write two conditions of equilibrium of a firm under perfect competition?

Ans: 1) Marginal cost (MC) must be equal to marginal revenue(MR)

2) The MC curve must cut the MR curve from below

23) What is equilibrium?

Ans: equilibrium refers to a state in which forces making change the opposite direction are perfectly in balance so that there is no tendency to change.

24) What is equilibrium price?

Ans: The equilibrium price refers to the price at which demand and supply are equal to each other.

25) What is market price?

Ans: The very short period price under perfect competition is called market price.

26) What is sub- normal price?

Ans: The short period price under perfect competition is called sub- normal price.

27) What is normal price?

Ans: The long period price under perfect competition is called normal price.

28) What is short period market?

Ans: The short period market allows producers to adjust their production to market conditions to some extent. When in needed, either they increase supply by employing more variable factors or by overutilizing the existing factors. In short period market fixed factors cannot be changed.

29) What is long period market?

Ans: In the long period market, the time is enough to increase the supply by increasing most of the engaged factors inputs simultaneously. In such time period, expansion of existing fixed factors is possible along with the variable factors. Hence, in the long period market, all factors are variable and none is fixed.

30) What is super normal profits/abnormal profits?

Ans: If price charged by a firm is higher than the average cost of production, there occurs super normal or abnormal profits.

31) What is normal profit?

Ans: If price charged by a firm is equal to average cost of production, there occurs normal profit.

32) What is a plant?

Ans: A plant is the producing unit of a firm.

33) What is firm?

Ans: A firm is a unit that employs factors of production to produce commodities that it sells to other firms, households or to the govt.

34) What is an industry?

Ans: A group of firms that sell a well defined product or closely related set of products is called an industry.

35) What is producer's surplus?

Or

36) What is the shape of AR curve/ demand curve under PC?

Ans: The AR curve/ demand curve under PC is horizontal straight line parallel to ox- axis.

37) What is the elasticity of demand curve (AR curve)?

Ans: perfectly elastic.

38) Why is the demand curve/ AR curve is perfectly elastic/ horizontal straight line?

Ans: The demand curve/AR curve is perfectly elastic/horizontal straight line because a firm under PC sells as many units of the commodity at the single uniform price.

39) What is the significance of very large no. Of buyers & seller under PC?

Ans: By very large no. Of sellers under PC we mean that every individual seller sells a quite insignificant portion of the total supply. Like sellers no single buyer is able to influence the market price in any price.

40) What is the significant of homogeneous products under PC?

Ans: Under PC, products sold are homogeneous which refer to those products which are identical in respect of quality, size, shape, colour, weight, design etc. The products of all firms are perfect substitute of each other.

MONOPOLY

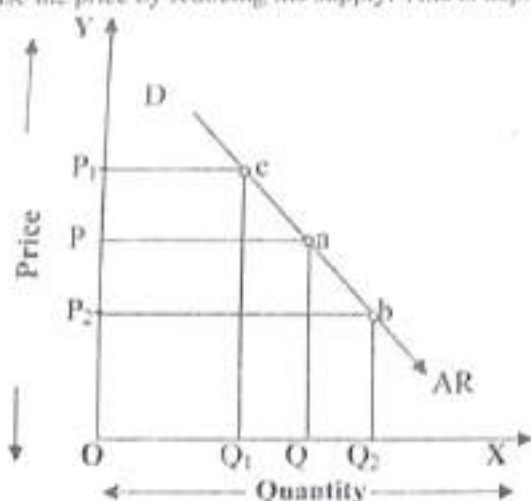
1. What is monopoly? Explain the features / conditions/ assumption/ characteristics of monopoly?

Ans:- Meaning of monopoly:-

The word 'monopoly' is composed of two words- 'mono' & 'Poly'. 'Mono' means single and 'Poly' means seller. Thus monopoly refers to a market situation where there is only one seller of a product. Buyers have no option but to purchase the commodity from the seller or going without it. There is no close substitute for the product sold by the only seller. The seller has full control over the supply of the product.

Features:-

- (1) Single seller & a large no. of buyers:- Under monopoly, there is only one seller of a product. The seller may be in the form of sole proprietorship, partnership or in the form of joint stock company. Being the only seller, a monopolist faces no competition from other firms. Since there is no competition, the firm is able to earn abnormal profits permanently.
- (2) No close substitutes:- Under monopoly, there are no close substitutes available of the product sold by the monopolist. As a single seller, he may be a king without crown.
- (3) Restriction on the entry of new firms:- Under monopoly, there are strong barriers that prevent entry of new firms into the industry. The barriers may be in the form of patent rights copy right, economies of scale etc.
- (4) Firm is a price maker:- monopoly firm has full control over the supply because there is no competition in the market and there are barriers to the entry of new firms into the industry. Therefore, it can influence the market price by varying its supply.
- (5) Price discrimination:- The act of selling the homogenous product at different prices to different buyers is known as price discrimination. A monopolist can charge different prices from his different buyers easily. If a monopolist adopts a policy of price discrimination. The situation is called discriminating monopoly. A monopolist adopts the policy of price discrimination so as to maximise profit.
- (6) No selling cost:- In monopoly, there is no competition and hence there is no need to incur advertisement cost or what is called selling cost. However, it may incur very normal selling cost in the beginning to give information to buyers about its product.
- (7) Shape of AR curve:- A monopolist faces a down-ward sloping demand curve or average revenue curve. This is because if the monopolist wants to sell more, he can do so only by lowering the price. He can also raise price if he is prepared to forgo some sales. Alternatively, the monopolist can lower the price by increasing the supply and can raise the price by reducing his supply. This is depicted in the following figuring:-



In the above Figure AR is the average revenue curve or demand curve faced by a monopoly firm. At price OP, Quantity demanded is OQ. If the monopolist wants to sell more, Say, OQ₁ quantity, he has to lower the price from OP to OP₁. If he restricts the supply to OQ₂ price will raise to OP₂ level. By joining the price- Quantity demanded combination points a b & c we get negatively sloped demand curve or AR curve.

2. Explain the price output determination under monopoly in the short period?

Ans:- In short period, a monopoly firm has to work with a given existing plant. It can expand or contract output by varying the amount of variable factors of production but working with the fixed factors. It cannot adjust the size of the plant in the short run increase machineries. Maximisation of profit in the short run requires the fixation of output at a level at which marginal cost with the given existing fixed factors is equal to marginal revenue and the MC curve cuts the MR curve from below.

In the short period a monopoly firm in equilibrium can earn normal profit and may incur minimum loss. These three situations of equilibrium can be explained through figures as follows:-

- (1) Super normal profit:- If price determined by the monopoly firm is greater than its average cost then the firm will enjoy a super-normal profit. This is shown in the following diagram

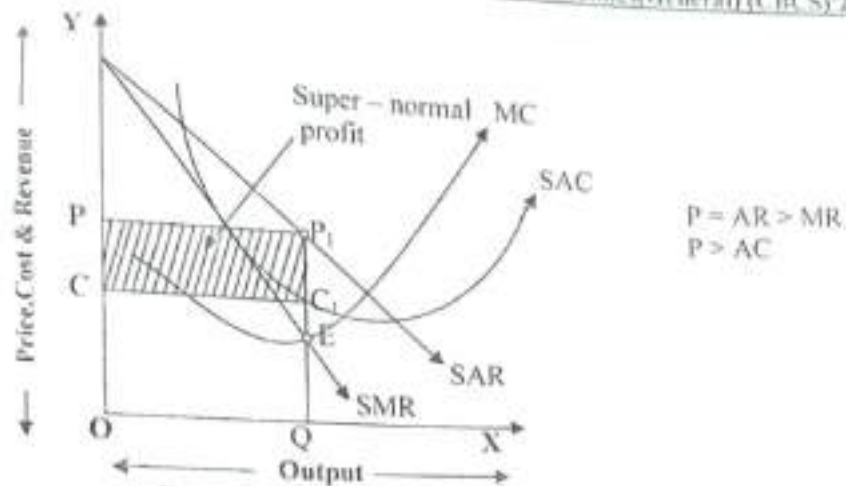


Fig. Super-normal profit

The following points are evident in the above figure.

Equilibrium Point = 'E' [MC = MR & MC curve cuts the MR curve from below]

Equilibrium output = OQ [= CC₁ or PP₁]

Average revenue or price = OP [= P₁Q]

Average cost = OC [= C₁Q]

Profit per unit = Price - Average cost
= (OP) - (OC)
= CP

Total profit = Profit per unit x Quantity sold
= (CP) x (CC₁)
= C C₁ P₁ P

Thus, the monopoly firm earn super-normal profit equal to the dotted area C C₁ p₁ P at equilibrium point E as shown in the above figure

(2) Normal profit :- A monopoly firm in the short run can also enjoy normal profit if price and average cost are equal. The following figure shown the case of normal profit.

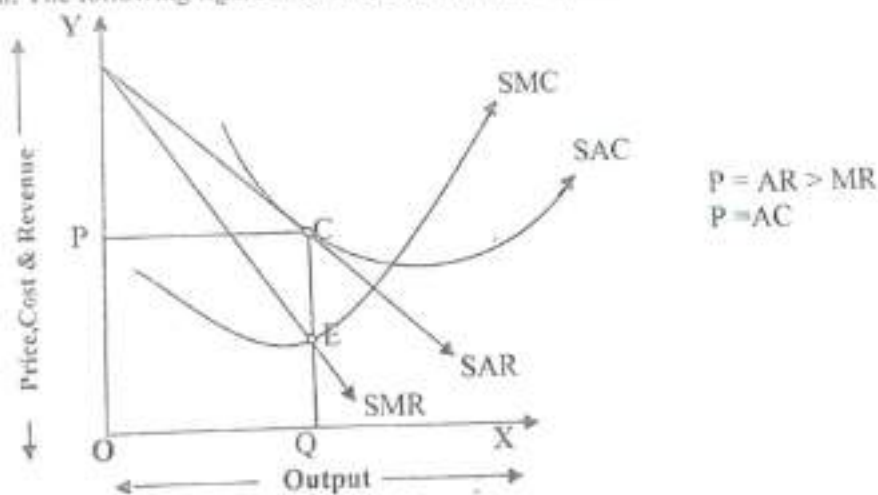


Fig. Normal profit

The following points are evident in the above figure:-

Equilibrium point = 'E' [Mc = MR & MC curve cuts the MR curve from below]

Equilibrium output = OQ [= PC]

Price or average revenue = OP [= CQ]

Average cost = OP [= CQ]

Profit per unit = Price - Average Cost
= (OP) - (OP)
= 0

Total profit = Profit Per unit X Qty sold
= 0 (OQ)
= 0

Since, $AR (P) = AC$, the monopoly firm earns only normal profit i.e., no profit no loss.

- (3) Minimum Loss:- A monopoly firm in the short period can also incur minimum loss when average cost becomes higher than price (AR). The following figure shows the case of minimum loss.

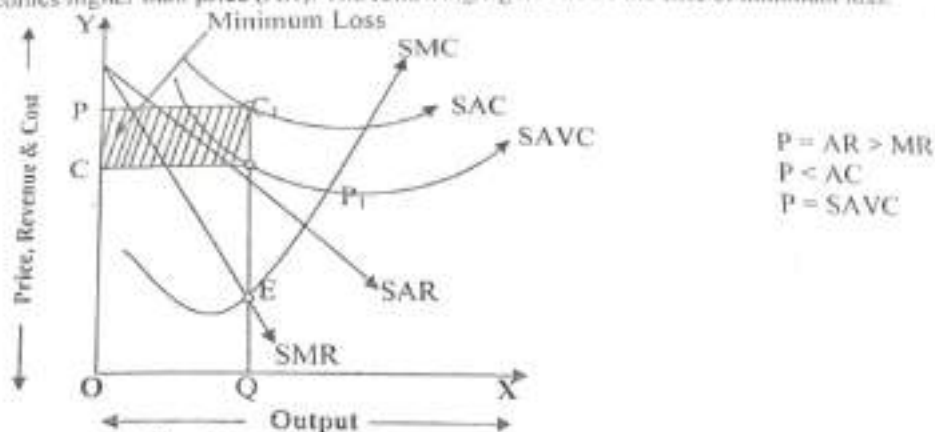


Fig. Minimum Loss

The following points are evident in the above figure.

Equilibrium point = 'E' ($\because MC = MR$ & MC curve cuts the MR curve from below)

Equilibrium output = OQ [$= PP_1$ or CC_1]

Price or average revenue = OP [$= P_1Q$]

Average cost = OC [$= C_1Q$]

Loss per unit = Average cost - Price
 $= (OC) - (OP)$

Total loss = Loss per unit (qty sold)
 $= CP \times PP_1$
 $= PP_1 C_1C$

A firm incurring losses will continue to produce in the short run so long as it is in a position to cover average variable cost (SAVC). If the price falls short of the SAVC, the monopoly firm will shut down its business.

3. Explain with the help of a diagram the long run equilibrium of a firm under monopoly?

OR

Explain price-output determination of a firm under monopoly in the long run period?

Ans:- Long run period is a period which is long enough to fully adjust the supply to the changes in demand of a product. A monopoly firm in the long run will also be in equilibrium at a point where its marginal revenue is equal to its long run marginal cost. A monopoly firm in the long run will not be satisfied with normal profit only rather it is in a position to earn super normal profits. In the long run, a monopoly firm can fully exploit the situation.

The following figure shows the case of super-normal profit of a monopoly firm in the long run.

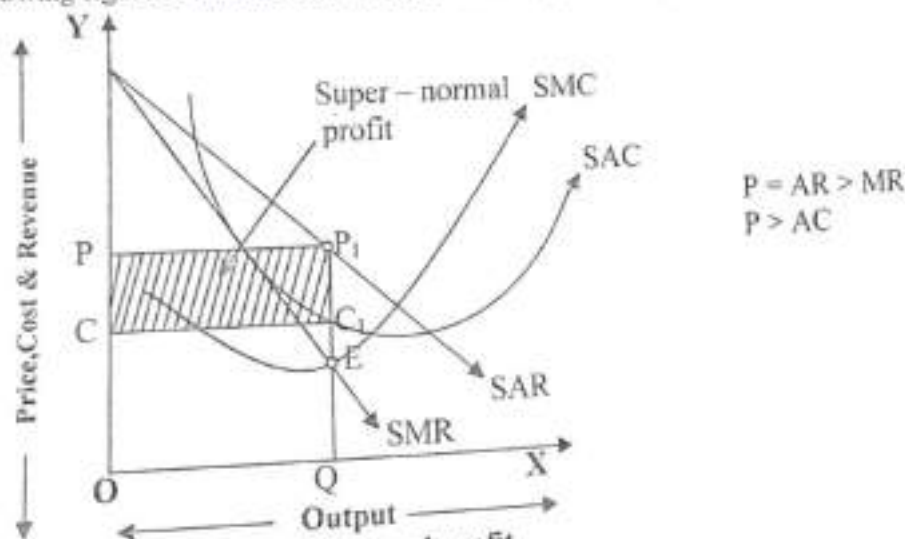


Fig. Super-normal profit

4. Explain why there is absence of the supply curve under monopoly?

OR

Explain why there is no unique supply curve under monopoly?

Economists believe that there is no unique or precise supply curve under monopoly. A profit maximising monopoly firm determines its equilibrium output where $MR = MC$ and $P > MC$. Under these conditions, a unique relationship between (AR) & quantity supplied cannot be established. The reason is that there are two different possibilities:-

- (1) That given the MC, the same output is supplied at different prices.
- (2) That at a given price, different quantities may be supplied if the two downward sloping demand curves have different elasticity. The two cases are illustrated in the following figures:-

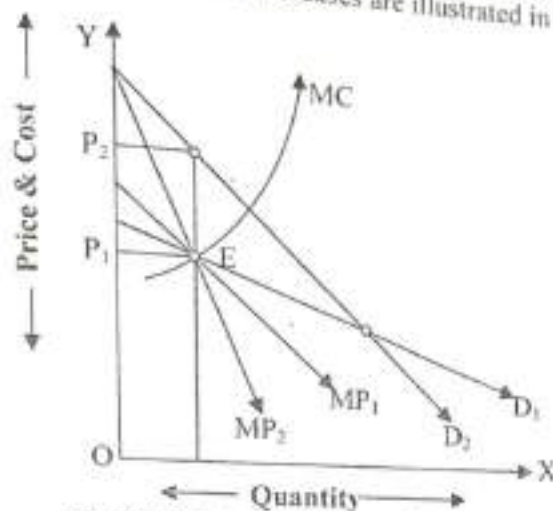


Fig.:(1) Same quantity supplied at two different prices

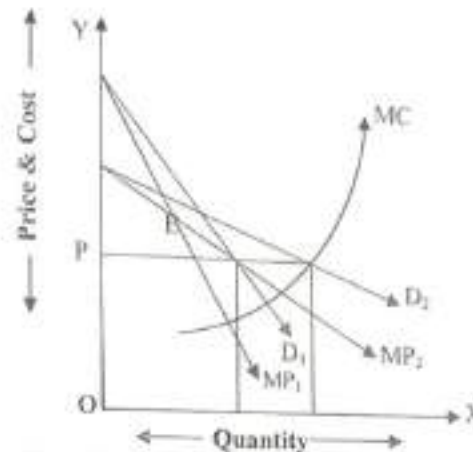


Fig.:(2) Different quantity supplied at the same prices

Figure 1 shows that the same quantity can be supplied at two different prices. Suppose a monopoly firm is faced with two demand curves D_1 & D_2 with different slopes and the corresponding MR curves as MR_1 & MR_2 . Suppose also that the firm's MC curve passes through the point of intersection of the two demand curves at point E, determining Equilibrium output at OQ. The same quantity (OQ) can be supplied at two Different Prices- at price OP_1 When demand curve is more elastic (D_1) & price OP_2 When demand curve is less elastic (D_2). Obviously there is no quantity supplied.

Figure 2 shows that different quantities are supplied at the same price, OP. Given the MC Curve, Quantity OQ_1 is supplied when demand curve is D_2 at the same price, OP. Given the MC curve quantity OQ_2 is supplied when demand curve is D_1 & quantity OQ_2 is supplied when demand curve is D_2 at the same price, OP. In this case also, there is no unique relationship between price & quantity supplied.

The above two situations lead one to the conclusion that there is no unique supply curve under monopoly.

5. Explain the shift in demand curve & absence of the supply curve under monopoly?

Ans.: The above answer.

6. Explain the various measure of monopoly power?

Ans:-Measuring monopoly power has been a very difficult problems. The efforts to devise a method for measuring monopoly power have not yield any universal or non-controversial measure. To devise atleast conceivable measure of monopoly even if practical measurement is impossible continues to remain the interest of the economists for atleast two reasons-

First, a part from intellectual curiosity, people would like to know about the economy in which they live, its industrial structure and the industries from which they get the supply.

Secondly, growth of monopolist have forced govt. Have many countries to formulate policies & devise legislative measure to control and regulate monopolist.

- (1) No. Of firm:- In case there is a single firm in an industry, the firm has the total and the absolute monopoly power. As the no. Of firms increase, the degree of monopoly power decreases. The smaller the no. Of firms, the greater is the degree of monopoly power of each firm in the industry, and vice-versa.
- (2) Concentration ratio:- The concentration ratio is obtained by calculating the percentage share of the largest group of the firms in the total output of an industry. If the concentration ratio is high monopoly power will be high & vice-versa.
- (3) Excess profitability criterion :- If profit rate of a firm continues to remain sufficiently higher than all opportunity costs required to remain in the industry. It implies that neither competition among the seller nor the entry of new firms prevents the firm from making a pure or monopoly profit.
- (4) Triffin's cross elasticity criterion:- According to Triffin's criterion, cross elasticity taken as the measure of degree of monopoly. The lower the cross elasticity of the product of a firm, the greater the degree of its monopoly power & vice-versa.

(5) Lerner's index of monopoly power:- Another measure of degree of monopoly power based on degree of profitability has been suggested by A.P Lerner. According to him, for a competitive firm, equilibrium price equals marginal cost but for a monopoly price exceeds marginal cost.

7. Explain the rule of thumb under monopoly?

Ans:- Theoretically, Profit is maximised at the level of output at which firm's $MR = MC$. Once a profit maximising output is determined, equilibrium price is determined at AR , given the firm's demand curve, $AR = D$. This theoretical proposition is based on the assumption that firms have the perfect knowledge of their AR , MR & MC curves. Economists claim that under this condition, firms follow a practical rule, which is called the rule of thumb for pricing.

The following formula can be used as the rule of thumb for price determination by the monopolist.

$$P = \frac{MC}{1 + \left(\frac{1}{e}\right)}$$

Given this rule of thumb of formula for pricing. If marginal cost (MC) & elasticity of demand (e) are known, Price of the product can be worked out by the rule of thumb pricing. For eg. suppose elasticity of demand for a firm's product (e) has been estimated at -2 and MC has been worked out as ₹ 10. Given the measures of profit elasticity (e) and marginal cost (MC) the price of the product can be worked out as follows:-

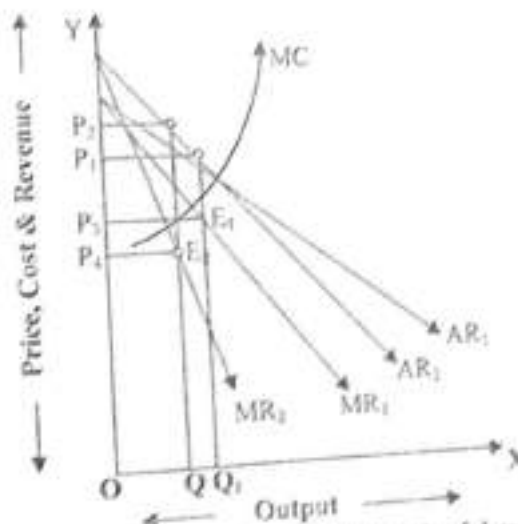
$$\begin{aligned} P &= \frac{MC}{1 + \left(\frac{1}{e}\right)} \\ &= \frac{10}{1 + \left(\frac{1}{-2}\right)} \\ &= \frac{10}{\frac{-2+1}{-2}} \\ &= \frac{10}{\frac{-1}{-2}} \\ &= 20 \end{aligned}$$

Thus, going by the rule of thumb pricing the price of the monopoly firm is fixed at Rs. 20. This is the profit maximising price.

It may thus be concluded that assuming MC of the firm to be given, the following conclusion can be drawn from the rule of thumb for pricing.

- (1) The higher the elasticity of demand, the lower the mark-up price and
- (2) The lower the elasticity of demand, the higher the mark-up price.

The above conclusion of the rule of thumb of pricing are illustrated graphically in the following diagram:-



Suppose given the monopoly firm's MC curve, there are two kinds of demand curves with different elasticities. In the figure, AR_1 & AR_2 curves represent the two demand curves and MR_1 & MR_2 curves represent their corresponding marginal revenue curves. AR_1 shows a higher elasticity of demand than the AR_2 curve. As the figure shows, the MC & MR curves intersect at point E_1 determining equilibrium output at OQ_1 & equilibrium price at OP_1 . Similarly, in case of the demand curve AR_2 with lower elasticity, MC & MR_2 curves intersect at point E_2 determining equilibrium output at OQ_2 & equilibrium price at OP_2 .

It is observed that in case of higher elasticity, demand curve AR_1 , equilibrium price is OP_1 . By comparison, price $OP_2 > OP_1$ - obviously, increase of lower elasticity of demand curve (AR_2), equilibrium price is OP_2 which is much higher than the price OP_1 increase of lower elasticity. This analysis proves the point that the higher the price elasticity of

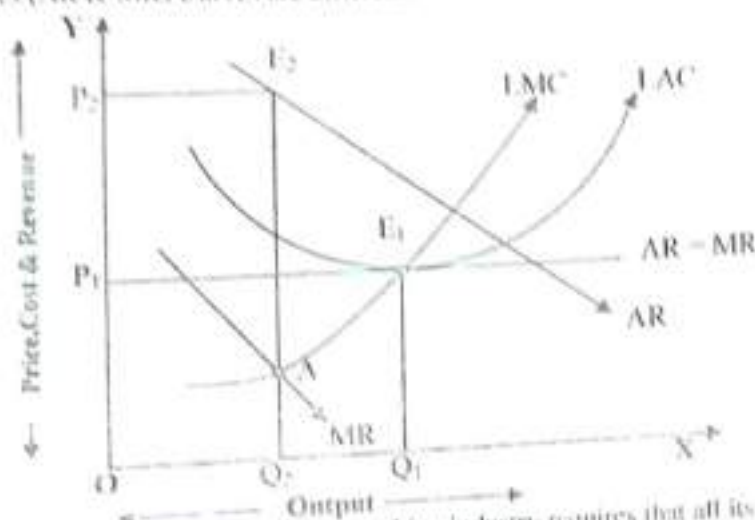
the lower the price & the lower the price elasticity of demand the higher the price under the rule of thumb.

Explain the social cost of monopoly power including dead weight loss?

Ans:- The social cost of monopoly is conceived and measured in terms of difference between the price & output under monopoly and the price & output under perfect competition. It has been theoretically proved that price is higher & output is lower under monopoly compared to price & output under perfect competition. Besides, it has been proved that there is a deadweight loss under monopoly. It is concluded on the basis of these theoretical facts that a monopoly causes social loss to the society due to low production and high price & a dead weight loss.

Let us now use simple models of monopoly and perfect competition to examine the loss of social welfare due to monopoly. Let us begin by comparing the price & output under monopoly & perfect competition.

Comparison of Long run price & output under monopoly & competitive industry:- The following figure presents a comparative analysis of equilibrium price & output under perfect competition & monopoly in the long run. Let us assume that LMC & LAC curves are identical for both the competitive industry & a monopoly, but their long run revenue curves (AR & MR) Curves are different.



The long run equilibrium of a competitive industry requires that all its firms are in equilibrium i.e. all the firms have their $AR = MR = LAC = LMC$. This condition is satisfied at point E_1 in the above figure. Thus, in a competitive industry, equilibrium price is OP_1 and equilibrium output is OQ_1 . Now if this industry is monopolised, the revenue conditions (AR & MR) will be different. The AR & MR curves for the monopolised industry are given by the AR & MR curves respectively in the figure. Given its AR & MR curves, the monopoly firm will reach its equilibrium and maximise its total profit at the level of output at which its $MR = MC$. This level of output is shown by point A , the point of intersection of MR & LMC curves. Thus, the equilibrium output under monopoly will be OQ_2 and the equilibrium price will be OP_2 . The following table presents a comparison of the equilibrium price & output under perfect competition and monopoly.

Price / Output	Perfect Competition	Monopoly	Comparison
Price	OP_1	OP_2	$OP_1 > OP_2$
Output	OQ_1	OQ_2	$OQ_1 > OQ_2$

It may be concluded from the above data that under identical competition output is higher than under monopoly and price in the competitive industry is lower than in monopoly. Perfect competition therefore more desirable from social welfare point of view under the given conditions.

The dead weight loss under monopoly:-

A general complaint against monopolist is that monopoly causes loss of social welfare and distortions in resource allocation. The loss of social welfare is caused by sub-optimal use of resources allocation. The loss of social welfare is caused by sub-optimal resources use of resources and by dead-weight loss under monopoly. The sub-optimal use of resources and loss of social welfare are illustrated in the following figure assuming a constant cost industry which has $LAC = LMC$. The revenue conditions are shown by the AR & MR curves. Given the cost and revenue conditions a perfectly competitive industry will produce OQ_1 at which $LAC = LMC = LAR$ the price under perfect competition will be determined at OP_1 .

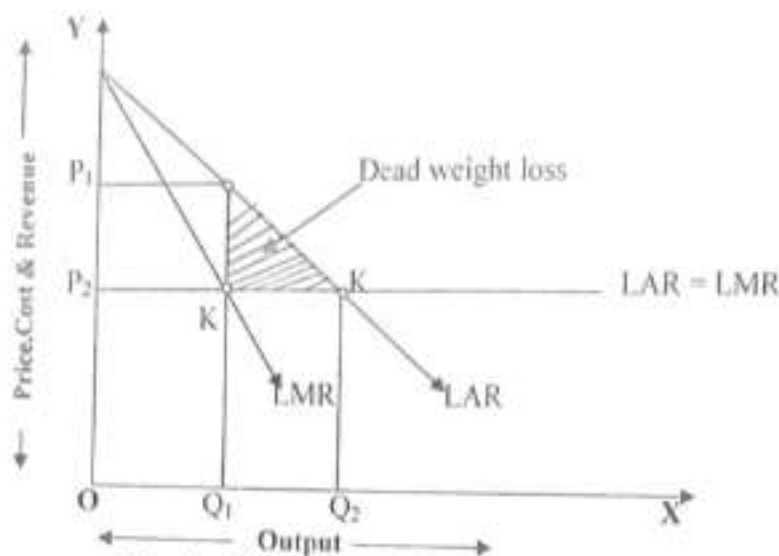


Fig.: Dead Weight Loss Under Monopoly

On the other hand, under the same cost equilibrium at point K, given the equilibrium point, the monopoly firm produces OQ_1 output and charges price OP_1 . The comparison of prices and output under monopoly and perfect competition gives the measures of the loss of social welfare. It is noted that price is higher and output is lower under monopoly which retard the welfare of the consumers.

9. What is price discrimination? Explain the degrees of price discrimination?

Ans: Meaning of price discrimination:

Price discrimination refers to charge different prices for the same product from the different buyers on the basis of personal, situational and trade consideration for reasons not associated with difference in cost. In order to maximize profit, the monopolist adopts the policy of price discrimination when it is possible and profitable for him to do so.

Degrees of price discrimination:

Prof. A.C. Pigou has given the following three degrees of discriminating monopoly.

1. Price discrimination of 1st degree: price discrimination of 1st degree is said to exist when the monopolist is able to sell each separate unit of his product at different prices. In case of 1st degree price discrimination, a seller charges a price equal to what the consumer is willing to pay. It means the seller leaves no consumer's surplus with the consumer. A part from this, under perfect price discrimination, the demand curve of the buyer like under simple monopoly becomes the marginal revenue curve of the seller.
2. Price discrimination of 2nd degree: price discrimination of 2nd degree is said to exist when the buyers are divided into different groups and demand price of that groups. This type of price discrimination would occur if each individual buyer have a perfectly inelastic demand curve for goods below and above a certain price.
3. Price discrimination of 3rd degree: price discrimination of 3rd degree is said to exist when the seller divides his buyers into two or more than two sub markets and from each group a different price is charged. The price charged in each sub-market depends on the output sold in that sub markets along with demand conditions of that sub-markets. In the real world, it is the 3rd degree price discrimination which exists.

10. Write the conditions of price discrimination?

Ans: 1. Difference in elasticity of demand: price discrimination is possible only when elasticity of demand will be different in different markets. The monopolist will fix higher price when demand is inelastic and low price when the demand is more elastic. In this way, he will be able to increase his total revenue.

2. Market imperfections: Generally, price discrimination is possible only when there is some degree of market imperfections. The individual is able to divide his market into separate parts only if it is imperfect.

3. Differentiated product: price discrimination is possible when buyers need the same service in connection with differentiated products. For e.g., railways charges different rates for the transport of coal and copper.

4. Legal sanction: in some cases, price discrimination is legally sanctioned. As electricity board charges lowest for domestic use and highest for commercial houses.

5. Monopoly existence: price discrimination is also called discrimination monopoly. It is evident that price discrimination is possible only under conditions of monopoly.

11. Write the conditions of profitability under price discrimination?

Ans: Prof A.C. Pigou and Mrs. Joan Robinson pointed out that price discrimination is profitable under the following two conditions:

1. The first essential condition is that goods sold in the cheaper market can not be resold in the dearer market.
2. The second essential condition is that buyers should not move from one market to another.

- The above two conditions are the necessary conditions but not sufficient conditions. The presence of these conditions may make price discrimination possible but it may not be profitable. Price discrimination is profitable if elasticity of demand at a single monopoly price differs in the different markets.
12. Explain the price output determination under discriminating monopoly?
- Ans: The equilibrium of a discriminating monopoly can be illustrated with the help of the following set of diagrams.

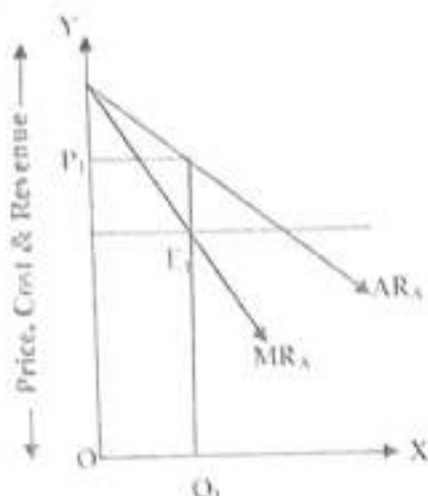


Fig.1: Market 'A'
(Less elastic demand)

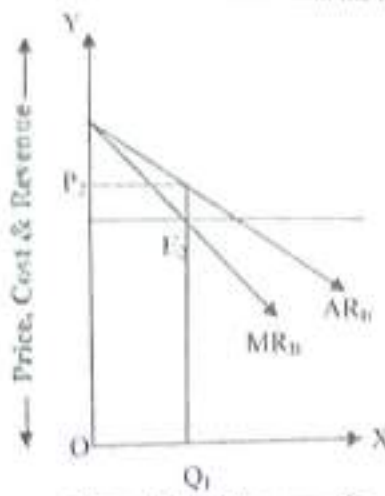


Fig.2: Market 'B'
(More elastic demand)

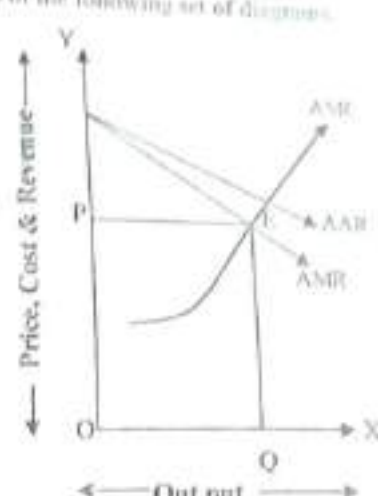


Fig.3: Total Market

The monopolist has to take three decisions:

1. What should be the total output?
2. How to divide total output between two different sub-markets?
3. What price should be charged in each market?

1. The discriminating monopolist produces that level of output where the following two equilibrium conditions are satisfied:

- a) Marginal cost (MC) must be equal to marginal revenue (MR) &
- b) The MC curve must cut the MR curve from below at the point of equilibrium.

In figure 3, the discriminating monopolist is in equilibrium at point 'E' where the MC curve cuts the MR curve from below. Our monopolist produces output equal to OQ. The AMR is lateral summation of MR_A and MR_B of similarly, AR is the lateral summation of AR_A & AR_B of the two sub-markets.

2. The discriminating monopolist has to divide his total output between the two sub-markets 'A' & 'B' in such a way that –

- A) MRS (Marginal rate of substitution) in the sub-markets must be equal to each other and
- B) MRS in the two sub-markets also be equal to marginal cost of total output.

It is seen that MR in sub-market 'A' is E_1Q_1 and MR in sub market 'B' is E_2Q_2 , where $E_1Q_1 = E_2Q_2$. Marginal cost of the whole industry output is EQ where $EQ = E_1Q_1 + E_2Q_2$. In other words, MR of sub market 'A' is equal to MR of sub-markets 'B' and they are equal to MC of whole output. Thus the monopolist sells OQ_1 units in markets 'A' and OQ_2 units in market 'B' where $OQ_1 + OQ_2 = OQ$.

3. The monopolist charges OP_1 price in market 'A' and OP_2 price in market 'B'. It is seen that price OP_1 is greater than price OP_2 ; it is because of that fact that demand in market 'A' is less elastic (inelastic) in comparison to demand in market 'B'.

To conclude, it is seen that with given demand and cost conditions, the discriminating monopolist produces total output OQ to be distributed OQ_1 in market 'A' and OQ_2 in sub-market 'B' where he charges higher price (OP_1) in market 'A' in lesser elastic demand and lower price (OP_2) in sub-market 'B' with higher elastic demand.

13. What do you mean by horizontal and vertical integration of firms?

Ans: Horizontal integration is the process of a company increasing production of goods and services of the same part of the supply chain. A company may do this via internal expansions, acquisition, increasing market share or merger. The process can lead to monopoly if a company captures the vast majority of the market for that product or service. A single firm V.I.P, multi vertical integration is characterized by one firm engaged in different part of production. For instance, Indians one of the largest company reliance industries, has adopted a vertically integrated structure along the supply chain, i.e. from drilling and extracting, curved oil, transporting it, refining it into different petrochemical products to marketing.

14. Define monopoly?

15. Write two assumption (features of monopoly)?

16. What is the shape of demand curve (AR curve) under monopoly?

Ans: The shape of demand curve under monopoly is steeply downward sloping from left right.

17. Why is the demand curve(AR) curve under monopoly is negatively slope?

Ans: In order to sell more a monopolist reduces the price of the product and hence the demand (AR) curve faced by the monopolist is negatively sloped.

18. In which market a single firm constitute an industry?

Or

In which market there is no difference between a firm and an industry?

Ans: Monopoly.

19. In which market price discrimination is possible?

Ans: Monopoly.

20. What is price discrimination?

21. What is pure/absolute monopoly?

Ans: A pure/ absolute/perfect monopoly implies a single seller market with no substitute of the product. It is absolute no competition market with zero cross elasticity of demand.

22. What is discriminatory monopoly?

Ans: Discriminating monopoly occurs when the same product is sold to different sets of consumers at different prices.(Indian railway).

23. What is simple monopoly?

Ans: A simple monopoly exists when a single price is charged to all categories of consumers.

23. What is bilateral monopoly?

Ans: Bilateral monopoly is a market situation consisting of one buyer and one seller.

24. What is horizontal integration of firms?

25. What is vertical integration of firms?

26. Why cannot a monopoly firm earn normal profit in the long run?

Ans: A monopoly firm cannot earn normal profit in the long run because of closed entry of other firms.
