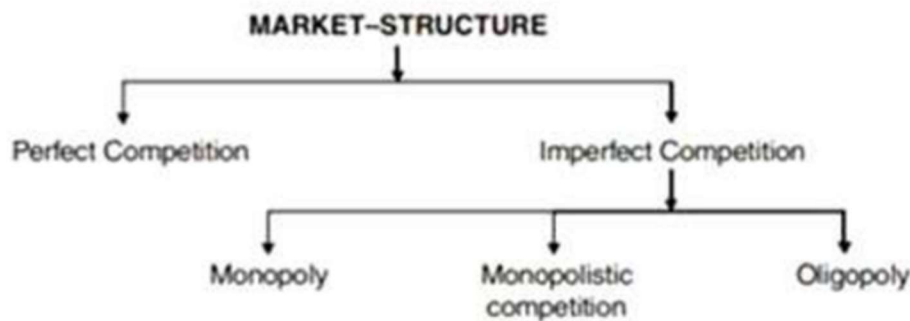


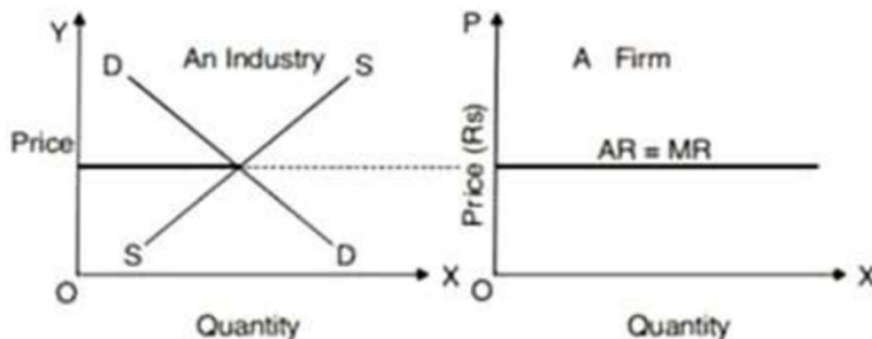
Chapter- 4: MICRO ECONOMICS

The Theory of the Firm under Perfect Competition

1. **Market** is a mechanism or arrangement through which the buyers and sellers of a commodity or service come into contact with one another and complete the act of sale and purchase of the commodity or service on mutually agreed prices.



Perfect competition is a market structure where there are large number of buyers and sellers selling identical products at uniform price with free entry and exit of firms and absence of govt. control. Under perfect competition, price remains constant therefore, average and marginal revenue other i.e., they become equal and parallel to x-axis.



In this, price is determined by the industry on the basis of market forces of demand and supply. No individual firm can influence the price of the product. A firm can take the decision regarding the output only. So industry is price maker and firm is price taker.

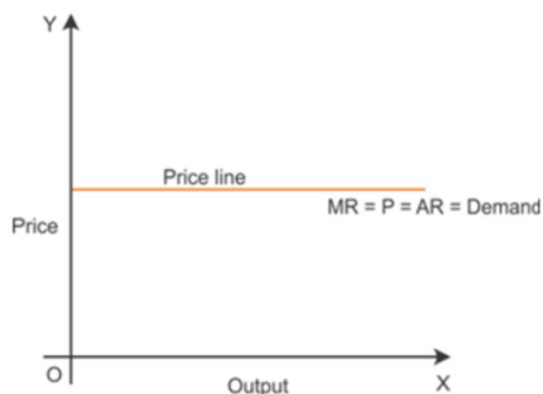
3. Important features of perfect competition:

1. Very large no. of buyers and sellers.
2. Homogeneous product.
3. Free entry and exit of firms in the market.

4. Perfect knowledge.
5. Perfect Mobility.
6. Perfectly elastic demand curve.
7. No transportation cost.

4. **Price Line** The price line is the line which represents the graphical relationship between price and output. The demand curve and the price line are equal in a perfectly competitive market.

Graphical representation of the price line is as below:-



The line indicates that a firm can sell its goods and services at the existing price. The shape of the price line in a perfectly competitive market is horizontal.

5. **Revenue:** It refers to the money receipts of a firm from the sale of its output.

6. **Total Revenue (TR)** is the sum total of revenue derived from the sale of all units of commodity.

TR = (P) (Q) or AR (Q) or ΣMR, here P is Price whereas Q is Output, AR is Average revenue, MR is Marginal revenue.

Average Revenue It is the revenue per unit output sold $AR = TR/Q$

7. **Marginal revenue** is the revenue which is generated by selling an additional unit of a commodity. It is the change in total revenue when an additional unit of a commodity is sold in the market. The relationship between market price and marginal revenue can be explained by using the following equations:

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

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

TR = Total revenue

MR = Marginal revenue

Q = Quantity

The above equation indicates that the price is equal to marginal revenue in a perfectly competitive market.

Graphical representation of the relationship between marginal revenue and price:

The diagram shows that the price, marginal revenue, average revenue and demand curve are the same in a perfectly competitive market.

8. Shape of TR, AR, MR, curves in perfect Competition

Profit is the difference between revenue and cost. It is determined as:-

Profit = Revenue – Cost

9. **Profit maximisation in a competitive market –**

If a profit-maximising firm produces positive output in a competitive market, then the following conditions must hold:

- At the quantity level, marginal revenue should be equal to marginal cost. If the marginal revenue is less than the marginal cost, then a firm would not produce more quantity in a perfectly competitive market.
- There should be an increase in the marginal cost according to an increase in the quantity produced.
- Price should not be less than the average variable cost. It should be equal or greater than that of the price in short run.
- Price should not be less than the long-run average cost. The price should be equal or more than the long-run average cost.

10. **Break Even point** Break even for a firm occurs when it is able to cover its all costs of production. Accordingly, break-even point is defined as a situation when $TR=TC$ or $AR=AC$. Under the situation, the firm earns only normal profits.

11. **Shutdown Point** It occurs when firm is just able to cover its variable costs, increasing the loss of fixed cost of production. Accordingly, Shut down point is defined as a situation when $TR=TVC$ or $AR=AVC$.

12. **Producer Equilibrium or Profit Maximisation** A producer is said to be in equilibrium, when he maximises his profits or minimises his losses.

Condition of profit maximisation

(i) $MR=MC$

(ii) MC is rising or MC should cut MR from below.

13. **Profit Maximisation in the Short-run under Perfect Competition**

- Condition-1, $MR= MC$ or $AR = P$
- MC curve should cut the $MR= AR$ curve from below.
- Condition-3 $P > AVC$

14. **Short run Supply Curve** The supply curve of a firm tells us the quantity of the product that a profit maximising firm is willing to produce at each possible price.

15. **Meaning of Supply** Supply means the amount of a commodity that firms are able and willing to offer for sale in the market in a given period of time and at a given price.

16. **Supply Schedule** Tabular statements of relationship between price and supply of commodity is called supply schedule.

17. **Supply Curve** Graphical presentation of relationship between price and supply of a commodity is called supply curve.

18. **Market Supply Curve** The market supply curve for a commodity shows relationship between the price of a given commodity and quantity sellers are inclined to sell.

19. **Determinant of Supply Curve**

- (i) Technological progress
- (ii) Input price
- (iii) Unit tax

20. **Elasticity of Supply** it can be defined as a measure of the degree of responsiveness of quantity supplied to changes in the commodity's own prices.

21. **Measurements of Elasticity of Supply** Percentage method $E = \frac{\% \text{ change in quantity supplied}}{\% \text{ change in price}}$ or $E = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$

Here, P = Actual Price, Q = Actual Quantity.

ΔP = Change in price, ΔQ = Change in Quantity

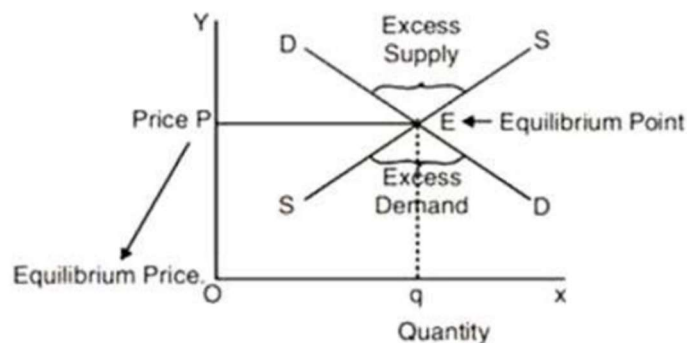
22. **Two Extreme Cases of Elasticity of Supply**

- (i) Perfect elastic supply ($e_s = \infty$)
- (ii) Perfect inelastic supply ($e_s = 0$)

23. **Equilibrium Price:** The price at which the quantity demanded and supplied are equal is known as equilibrium price.

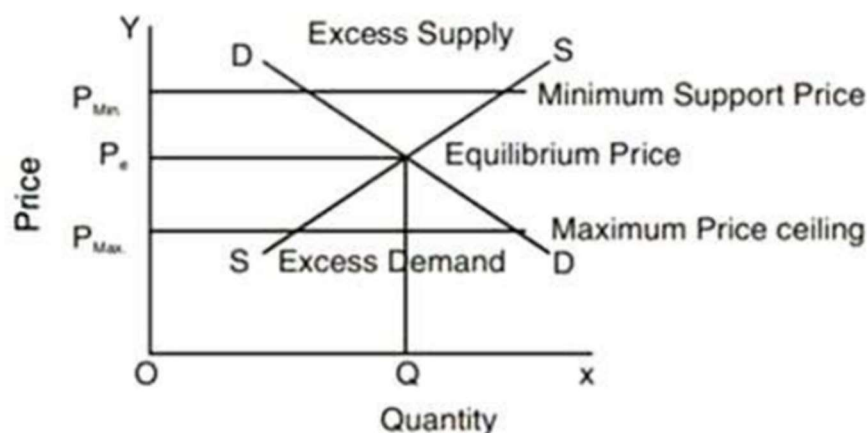
24. **Equilibrium quantity:** The quantity demanded and supplied at an equilibrium price is known as equilibrium quantity.

25. **Market equilibrium** is a state in which market demand is equal to market supply. There is no excess demand and excess supply in the market.



26. **Application of Demand of Supply:-**

(a) **Maximum Price Ceiling:** It means the maximum price the sellers are allowed to charge less than equilibrium market price. Government imposes such a ceiling when it finds that the demand for necessary goods exceeds its supply. That is, when consumers are facing shortages and equilibrium price is too high. Government does it in the interest of consumers. Excess demand may be fulfilled by: (a) Rationing (b) Dual marketing



(b) **Minimum Price Ceiling:** It means that producer are not allowed to sell, the goods below the price fixed by Government, When government finds that equilibrium price is too low for the produce, then Govt. fixes a price ceiling higher than equilibrium price to prevent the possible loss to the producers. The price is also called floor price or minimum support price. Generally, government buys the excess supply at this price.

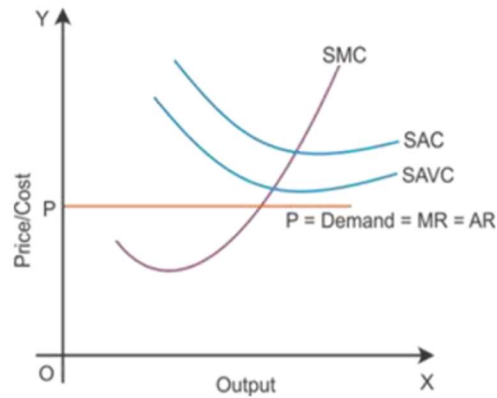
27. Technological Progress on Supply Curve:-

Technological progress reduces the marginal cost of production. Producers can produce comparatively more goods and services with the help of available factors of production. This situation is likely to shift the supply curve rightward and the marginal cost curve downward. There is a positive relationship between technological progress and supply. Technological progress often leads to a decline in the cost of production which enables producers to produce and supply more goods and services at the existing price.

Thus, technological progress is likely to increase supply causing a rightward shift in the supply curve.

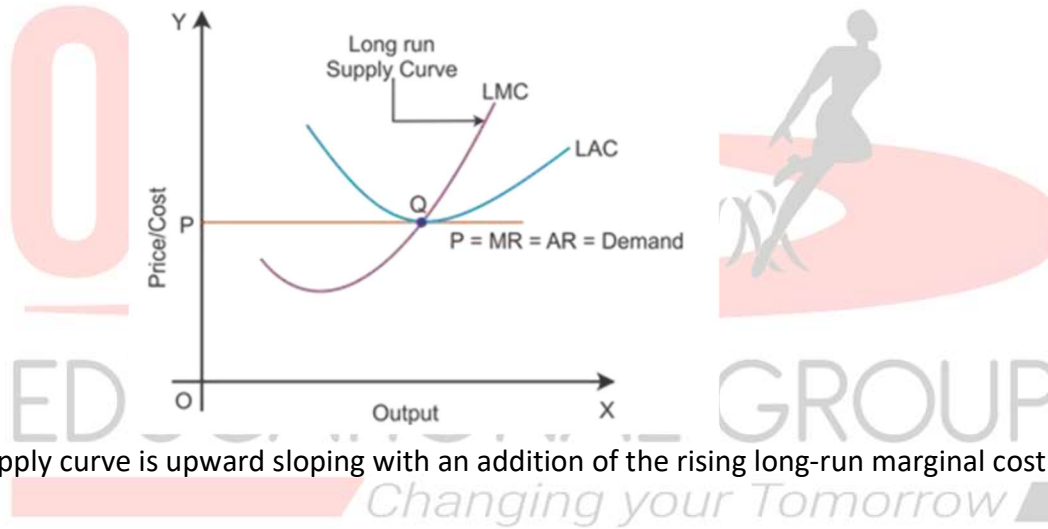
28. Supply Curve of the firm in short run-

The upward sloping part of the short-run marginal cost curve is considered the supply curve of a firm in the short run. The supply curve of a firm in the short run is comparatively less elastic as it cannot be changed according to changes in the demand for goods and services. The supply curve is also regarded as the addition of the upward sloping portion of short-run marginal cost. Graphical representation indicating the supply curve in the short run:



29. Supply curve of the firm in long run-

In the long run, supply of goods and services can be changed according to the changes in the demand. So, the shape of the supply curve in the long run is elastic as indicated in the diagram.



The supply curve is upward sloping with an addition of the rising long-run marginal cost curves.