

Unit - 1

- 1) What is Demand? Explain Law of Demand.
- 2) What is indifference Curve? Explain its Properties.
- 3) Explain Substitution Effect.

Unit - 2

- 1) Explain Law of Variable Proportion.
- 2) Why LAC is U-shaped? / Envelope Curve
- 3) Economic Scale
- 4) Laws of Return to Scale.

Unit - 3

- 1) Price Out determination at Perfect Competition Market.
- 2) Price --- at Monopoly market.
- 3) What is Price Discrimination and explain its degree.
- 4) Price at under Monopolistic market.
- 5) Cournot's Duopoly market.

Unit - 4

- 1) Marginal Productivity Theorem of Labour.
- 2) Explain Factor market equilibrium.

Unit - 1

- S.2
- 1) Individual demand
 - 2) Market demand
 - 3) Supply
 - 4) Elasticity of demand
 - 5) What is Cross Price elasticity of demand?
 - 6) What is income elasticity of demand?
 - 7) Budget Line
 - 8) Indifference Curve
 - 9) Explain DMRs.
 - 10) Price Effect
 - 11) Income Effect
 - 12) Giffen goods
 - 13) Strong ordering Preference
 - 14) Substitution

Unit - 2

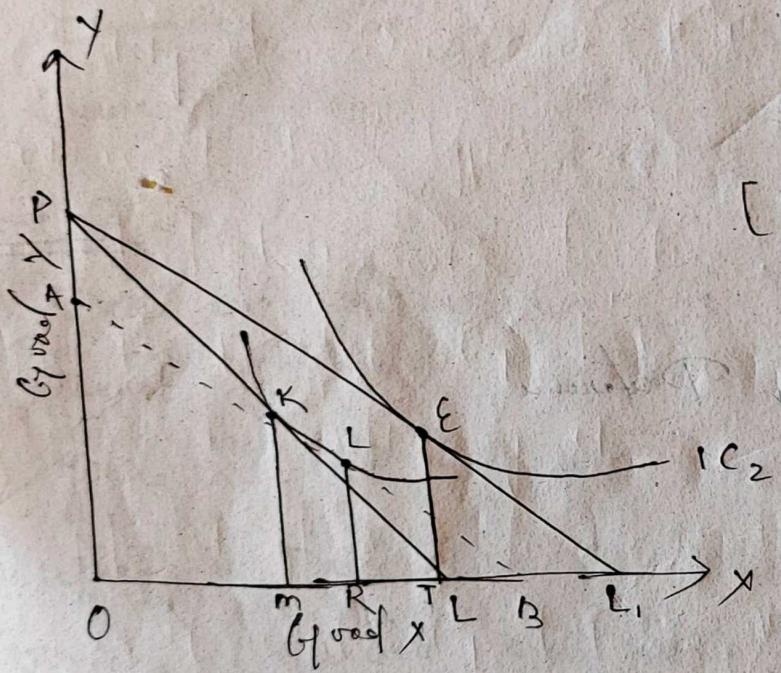
- S.3
- 1) Production Function
 - 2) Isoguent
 - 3) Isocost line
 - 4) Opportunity Cost
 - 5) Implicit Cost
 - 6) Define Market
 - 7) Perfect Competition Market
 - 8) Price discrimination
 - 9) Define oligopolistic market & its features.

10) oligopoly market & its Features

Unit - 4

- S.Q. 1) Demand for Labour
 2) Supply of Labour
 3) what is factor market equilibrium

Substitution Effect :-



KE \rightarrow Price Effect

EL \rightarrow Income Effect

RL - Substitution Effect

$$\text{Price Effect} = \text{income Effect} + \text{Substitution Effect}$$

Demand :— The quantity of a Commodity which a consumer is willing and able to pay at each possible Price during a given Period of time.

- It is also referred to effective ones.
- Price and demand are inversely proportional to each other.
- It means when the Price of a Product increases, its demand goes down and when Price of a Product goes down in the Market, its demand will go up.
- It is a Mutual Process between Producers and buyers.
it is of two types,
 - 1) Individual Demand : it is defined as, the amount of an item requested by a single buyer at a given cost at a given time span.
 - 2) Market Demand : it is defined as, the amount of an item requested by all buyers at a given cost at a given time span.

Factors affecting Individual demands :

- 1) Price of the given Commodity / Product
- 2) Price of related goods.

- 3) Income of the Consumer.
- 4) Taste and Preference
- 5) Expectation of Change in Future

Market Demands : New B = Bins

- 1) Population
- 2) Climate
- 3) Govt. Policy
- 4) Distribution of income

Demand Function: It Shows the relationship between Quantity demanded and factors influencing it.

- It is of two types,
- 1) Individual Demand Function: - It is defined as functional relationship between individual demand and factors influencing it.
- 2) Market demand function: It is defined as a functional relationship between Market demand and factors influencing it.

If I represents, $D_x = F(P_x, P_m, i, T, f)$

D_x = Demand for X.

F = Functional relationship

P_m = price of related goods

i = income

T = Taste

f = Future changes

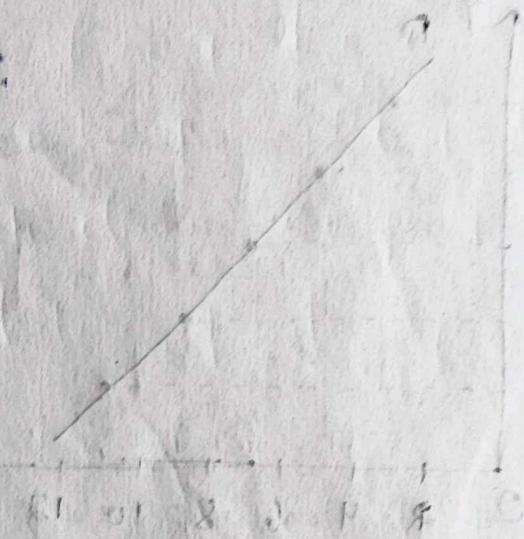
Demand Schedule :

- It is a tabular statement showing various quantities of commodity being demanded at various levels of price during a given period of time.
- It is of two types

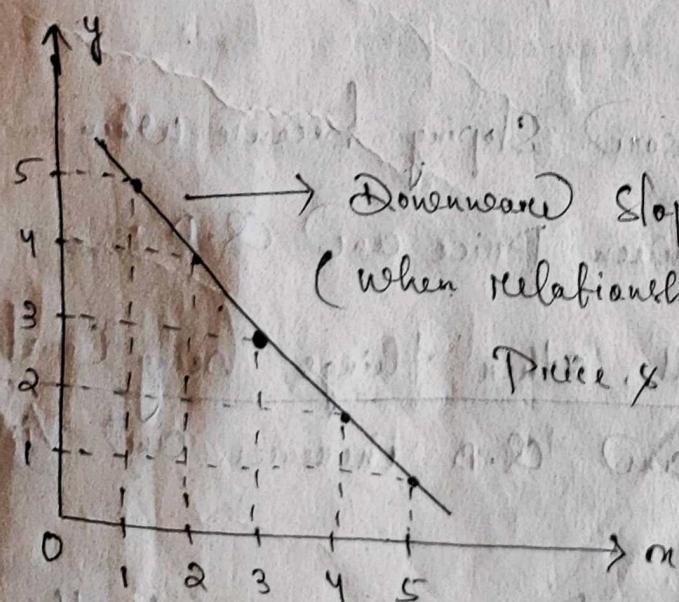
- 1) Individual demand Schedule : demand by a consumer.
- 2) Market demand Schedule : demand of all consumers.

Individual demand Schedule :

| <u>Price</u> | <u>Qs.D</u> |
|--------------|-------------|
| 1 | 5 |
| 2 | 4 |
| 3 | 3 |
| 4 | 2 |
| 5 | 1 |



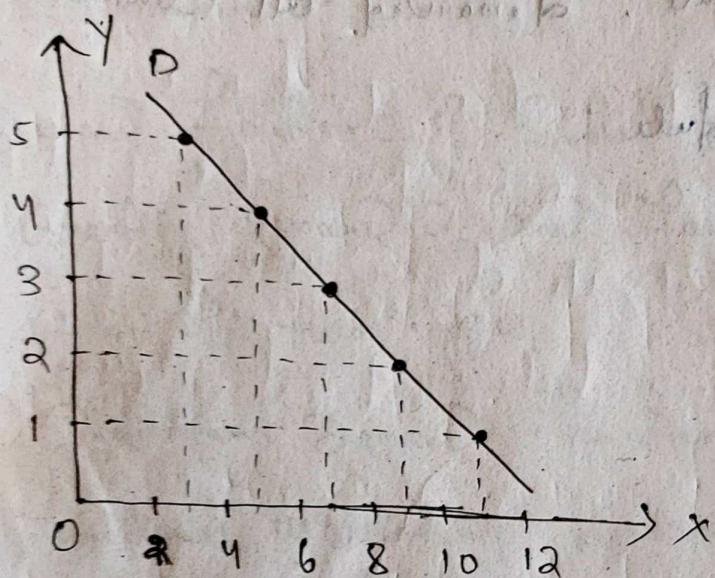
Curve



(when relationship is inverse between Price & Qs.D)

Market demand Schedule:

| <u>Price</u> | <u>Qd_x</u> | <u>Qd_y</u> | <u>Market demand (x+y)</u> |
|--------------|-----------------------|-----------------------|----------------------------|
| 1 | 5 | 6 | 11 |
| 2 | 4 | 5 | 9 |
| 3 | 3 | 4 | 7 |
| 4 | 2 | 3 | 5 |
| 5 | 1 | 2 | 3 |



- * A general demand curve is always downward sloping.
- * The demand is downward sloping because when inverse relationships between Price and Q.D.
- * According to Marshall, other things being constant When price decreases and Q.D increases and vice-versa.
- * The above table shows that, the Price of the commodity increases, its Quantity demand decreases.

Law of demand :

- It states that, inverse relationship between price and quantity demanded keeping other factors constant.
- This law is also known as First Law of Purchase.
- There are several other factors besides the Price of the given commodity that affects the quantity demanded of a commodity.
- The Separate influence of one factor affecting the demand, it is essential that the other factors are kept constant.

Assumption :

- 1) The Price of Substitute goods does not change.
- 2) The Price of Complementary goods remains constant.
- 3) The income of the consumer does not change.
- 4) Taste & Preferences of the consumers remains constant.
- 5) People do not expect the future Price of the commodity to change.

Table :

Graph :

Reason for law of demand:

1) Law of diminishing Marginal utility → Benefits → Satisfaction

- It states that as more and more units of commodity is consumed, the utility derived by the consumer keeps decreasing.
- It means that the demand for a commodity depends on its utility.
- If a consumer gets more satisfaction from a commodity he/she will pay more for it because of which the consumer will not be prepared to pay the same price for commodity.
- Hence, the consumer will buy more of the commodity only when its price falls.

2) Substitution Effect -

- Substituting one commodity in place of another commodity when the former becomes relatively cheaper is known as the substitution effect.
- When the price of ~~the~~ commodity (coffee) falls, if becomes relatively cheaper than its substitute (tea), assuming that the price of the substitute (tea) does not change because the demand for the given commodity (coffee) increases.

- 3) Income Effect -
- When there is a fall in the price of the given commodity, it increases the purchasing power of the consumer, resulting in an increase in the ability of the consumer to buy more of it.
 - The effect on demand is known as income effect.

$$\boxed{\text{Price Effect} = \text{Substitution Effect} + \text{Income Effect}}$$

- 4) Additional Customers -
- When the price of a commodity falls, various new customers who could not purchase the commodity earlier due to its high price are now in a position to buy it.
 - Also ~~new~~ old customers of the commodity will start demanding more of the commodity.
- 5) Different uses -
- Some commodities have different uses, among which some of them are more important & the rest are less important.
 - When the price of such commodities increases, consumers restrict its use to the most important purpose.
 - When the price of the commodity reduces, consumer will use it for every purpose.

Exceptions to law of demand -

1) Giffen goods :

- It is initially proposed by Sir Robert Giffen and also known as Giffen's Paradox.
- The special kind of inferior goods on which the consumers spend a big part of their income are known as Giffen goods.
- The demand for these goods increases with an increase in price and falls with a decrease in price.

e.g.: Rice

2) Fear of Shortage :

- If the consumers expect that a commodity will have to ~~disappear~~ in the near future, they will start buying more of it in the present.
- If the price of the commodity rises because of the fear of its shortage and rise in its price in the future.

3) Status Symbol or goods :

- ~~not~~ about the goods that are used as status symbol by the people.
- People buy goods like antique, Paintings because of the status symbols they want to maintain.

- they demand antique paintings only because their price is high.

4) Ignorance :

- Sometimes Consumers are unaware of the existing price of a good in the Market.
- they buy more of a commodity, even at a higher price.

5) Necessities :

- the commodities which are necessary for human life have more demand no matter whether their price reduces or increases.
- Ex: Medicines, Pulses, Wheat etc.

6) Change in Weather:

- When there is a change in the weather, demand for some goods changes, even if their price increases.
- Ex: Demand for Hairoat in rainy season.

7) Fashion-related goods :

- the goods related to fashion are demanded more, even when their price is high.

Ex: Specific Model of Mobile Phone.

Supply :

- It refers to the quantity of a commodity which a firm is willing & able to offer for sale at each possible price during given period of time.
- It is of two types,
 - 1) Individual Supply : only one Seller / firm
 - 2) Market Supply : all Seller

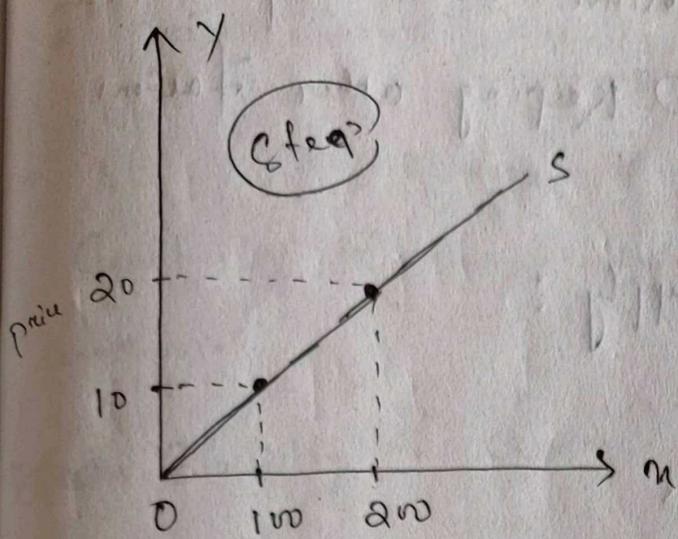
Determinants / Factors of Supply :

- Price of the given Commodity
- Price of other goods
- Price of factors of Production
- State of technology
- Government Policy
- Goals / objective of firm

Supply Schedule (Tabular Statement) :

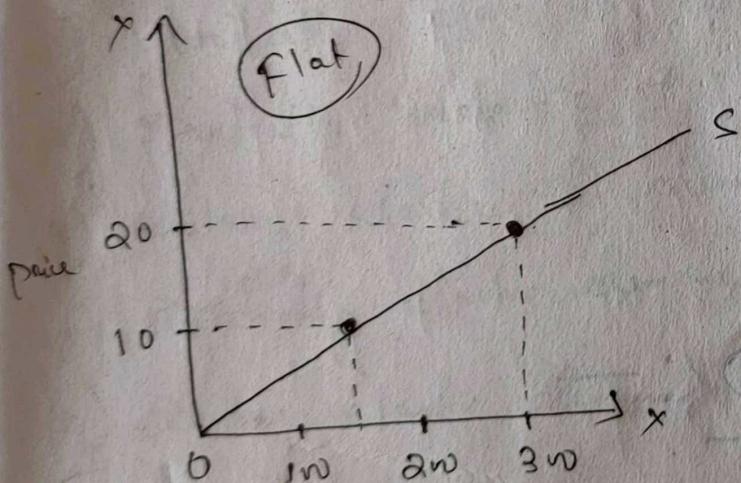
| <u>Price</u> | <u>Supply</u> | | |
|--------------|-------------------------|-------------------------|--|
| P | <u>S_1</u> | <u>S_2</u> | <u>M_s ($S_1 + S_2 + \dots + S_n$)</u> |
| 10 | 100 | 50 | 150 (Individual) |
| 20 | 200 | 100 | 300 (Market) |

Supply Shift Curve (graphical Presentation) :



Individual Supply Curve →

- * When it was a positive relationship, the curve is a upward sloping between Individual Supply & Price.



Market Supply Curve →

Supply Function :

$$S_x = f(P_x, P_o, P_f, G, O, \dots)$$

↓ ↓ Factors affecting Supply

Supply of Functional
x Relationship

law of Supply :-

- It states that the positive relationship between Price & Quantity Supplied Keeping other factors constant.

Reason behind law of Supply :

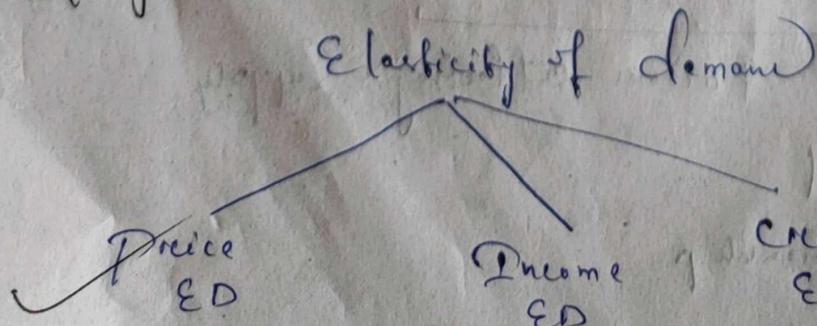
- 1) Profit Motive
- 2) Change in no. of Firms
- 3) Change in Stocks

Exception to Law of Supply :

- 1) Agricultural Goods
- 2) Future Expectations
- 3) Perishable Goods
- 4) Rare Articles
- 5) Backward Countries

Elasticity of Demand :-

- It refers to a percentage change in demand for a commodity with respect to percentage change in any of the factors affecting demand for that commodity.



- * Elasticity is a unit free measure
- * Price Elasticity ranges from 0 to infinity
- It is an economic measure to understand the sensitivity of one economic factor to the change in another.

$$\text{Elasticity of demand} = \frac{\text{Percentage Change in Demand}}{\text{Percentage Change in a factor affecting the demand of } X}$$

Types of Elasticity of Demand : —

- 1) Perfectly Elasticity of demand ($E_d = \infty$)
- 2) Perfectly inelastic of demand ($E_d = 0$)
- 3) Unitary elastic of demand ($E_d = 1$)
- 4) Highly elastic demand ($E_d > 1$)
- 5) Relatively less elastic demand ($E_d < 1$)

1) Perfectly Elasticity of demand :

- It is said to be, when a little change / no change in price leads to infinite change in quantity demanded.

- A slight increase in price will contract the demand to zero.

- In real world, it was ~~very~~ imaginary and ~~not~~ of any practical interest.

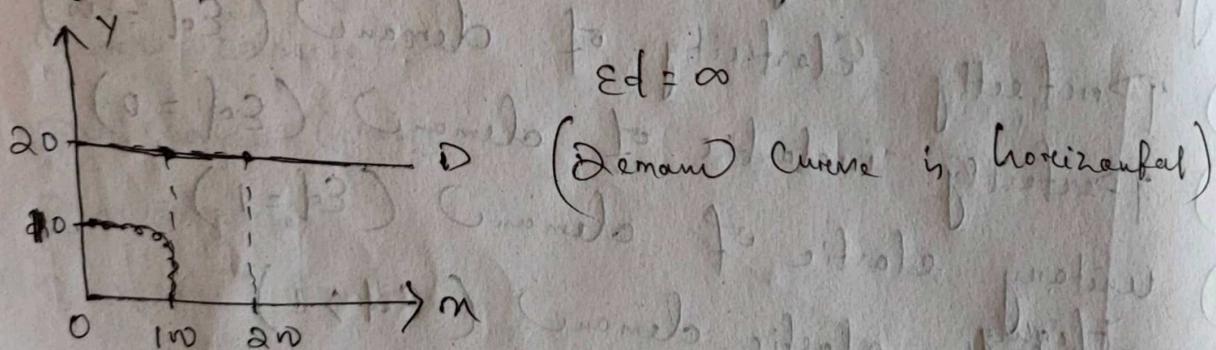
$$E_d = \frac{\% \text{ change in } D}{\% \text{ Change in } P}$$

$$E_d = \frac{50 \%}{0 \%} = \infty$$

Table

| <u>Price</u> | <u>CsD</u> |
|--------------|------------|
| 20 | 100 |
| 20 | 200 |

Diagram



2) Perfectly inelastic demand:

- It is opposite to Perfectly elastic demand.
- It states that any rise or fall in price of a commodity, the quantity demanded remains the same.
- $E_d = 0$

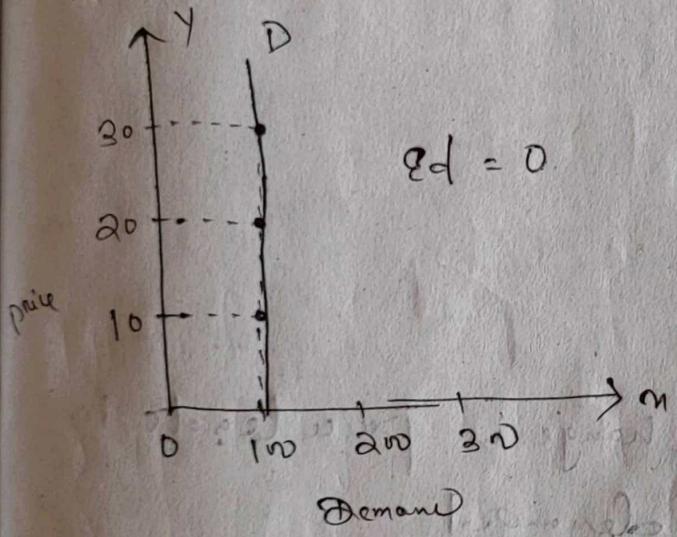
$$E_d = \frac{\% \text{ change in } D}{\% \text{ Change in } P}$$

$$E_d = \frac{0\%}{20\%} = 0$$

Table

| P | D |
|----|-----|
| 20 | 100 |
| 30 | 100 |
| 10 | 100 |

Graph



$$E_d = 0$$

3) Unitary Elastic Demand :

- When a given Proportional Change in the Price level brings the equal Proportional Change in quantity demanded.
- The numerical value of unitary E.d is 1.
- $E_d = 1$

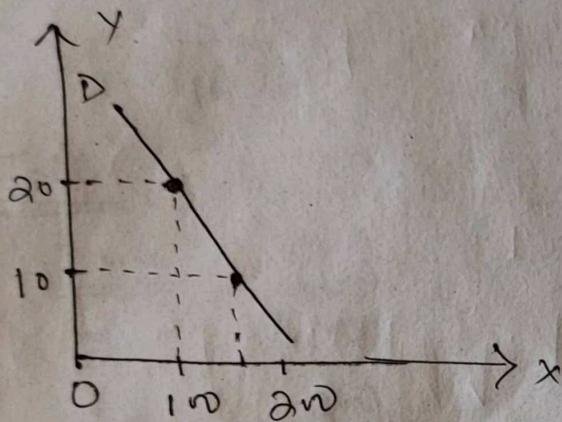
$$E_d = \frac{\% \text{ Change in } D}{\% \text{ Change in } P}$$

$$E_d = \frac{20\%}{20\%} = 1$$

Table :-

| P | <u>Ed</u> |
|----|-----------|
| 20 | 100 |
| 10 | 150 |

Graph :-



4) Highly Elastic :-

- if refers to, a small change in price leads to big change in quantity demanded.

-
$$\boxed{Ed > 1}$$

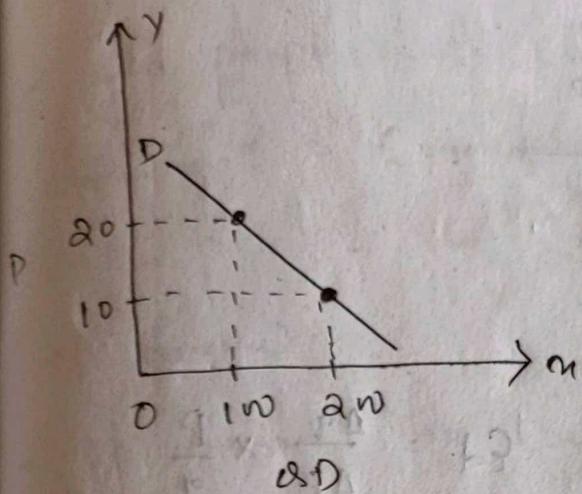
$$Ed = \frac{\% \text{ Change in } D}{\% \text{ Change in } P}$$

$$Ed = \frac{40 \%}{20 \%} = 2$$

Table :-

| P | <u>Qd</u> |
|----|-----------|
| 20 | 100 |
| 10 | 200 |

Graph :-



5) Less elastic :-

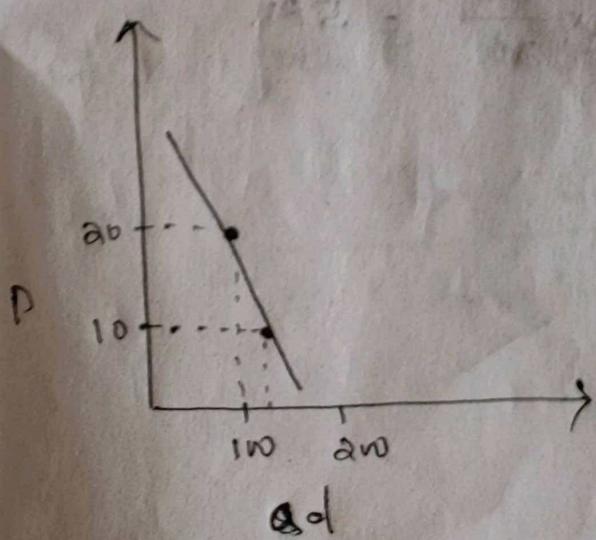
- It states that, a given Percentage Change in Price produces a less Percentage Change in quantity demanded.

$$- \boxed{Ed < 1}$$

Table :-

| <u>P</u> | <u>Ed</u> |
|----------|-----------|
| 20 | 100 |
| 10 | 120 |

Graph :-



Price elasticity of demand:

$$\text{Symbolically, } Ed = \frac{\frac{\Delta q}{q} \times 100}{\frac{\Delta P}{P} \times 100}$$

$$Ed = \frac{\Delta q}{\frac{q}{\Delta P}} \text{ or } Ed = \frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

where, Ed : Elasticity of demand

P : Price of the commodity

Δq : Change in Quantity demand ($q - q_1 = \Delta q$)

q : New Quantity demand

ΔP : Change in Price ($P - P_1 = \Delta P$)

$$\underline{\text{Ex}} : P = 100/-$$

$$q = 20 \text{ kg}$$

$$P_1 = 80/-$$

$$q_1 = 40 \text{ kg}$$

$$Ed = \frac{\Delta q}{\Delta P} \times \frac{P}{q} = \frac{20}{20} \times \frac{100}{20} = 5 \text{ Rs.}$$

$$= \cancel{\frac{20}{20}} \times \cancel{\frac{100}{20}}$$

Price Elasticity of Demand :-

- The proportionate change in the quantity demanded of a commodity due to a proportionate change in the price of the commodity is called Price Elasticity of Demand.
- If demand for any goods measure of the willingness of the consumer to buy less of the goods when the price rises and more of the goods when the price falls.
- The size of the quantity demanded of a commodity depends on its Price.

Using two methods to calculate Price E.D :-

i) Percentage / Proportionate Method :

- It is the most popular method of measuring the Price E.D.
- It is measured by the ratio of the Percentage Change in quantity demanded to the Percentage Change in the price of the commodity.

$$E_D = \frac{\% \text{ Change in Q.D}}{\% \text{ Change in Price}}$$

2) Geometric Method :-

- It measures the Price E.D at different points on the demand curve.
- It is also called the Point Method of Measuring Elasticity of Demand.

$$E.D = \frac{\text{Lower segment of the Demand Curve}}{\text{Upper segment of the Demand Curve}}$$

Factors affecting the Price Elasticity of Demand :-

- 1) Nature of Commodity
- 2) Diversity of uses
- 3) Availability of close Substitutes
- 4) Income Level of the Buyers
- 5) Time horizon

Income Elasticity of Demand :-

- It refers to the changes in the demand for a certain good with the changes in the real income of consumers.
- It is the percentage change in quantity demanded divided by the Percentage Change in income.

$$\text{Income } ED = \frac{\% \text{ Change in Q.D.}}{\% \text{ Change in consumer's income}}$$

- It was positive, Because when income is raised, demand for the product also increases.

Symbolically, $\text{Income } ED = \frac{\Delta q}{\Delta y} \times \frac{y}{q}$

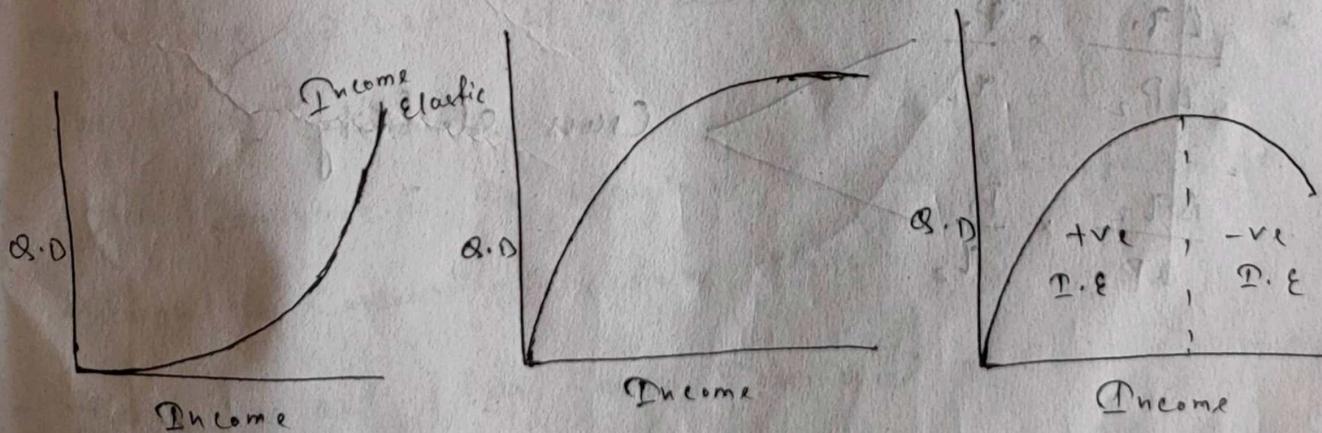
y = income

q = Quantity Demand

Inferior goods: When the income elasticity of goods is negative, those goods are called Inferior goods.

- As the higher income group prefers to buy cheap products.

Normal goods: When the income elasticity is positive, the goods are called normal goods.



Cross Price Elasticity of Demand :-

- It refers to the Percentage Change in one good price leads to Percentage Change in Quantity demand of another goods.
- It is calculated by dividing the Percentage Change in the quantity demand of one good by the Percentage Change in the price of another good.

Cross Price Elasticity of Demand = $\frac{\% \text{ Change in a Good A}}{\% \text{ Change in the price of Good B}}$

$$\epsilon_{AB} = \frac{\Delta q_1 / q_1}{\Delta P_2 / P_2}$$

$$* \frac{\Delta q_1}{\Delta P_1} \times \frac{P_1}{q_1}$$

Simple Elasticity of demand

$$\frac{\Delta q_2}{\Delta P_2} \times \frac{P_2}{q_2}$$

$$* \frac{\Delta q_1}{\Delta P_2} \times \frac{P_2}{q_1}$$

Cross elasticity

$$\frac{\Delta q_2}{\Delta P_1} \times \frac{P_1}{q_2}$$

Indifference Curve :-

- It is a graphical representation of the combination of different goods providing the same satisfaction level to the consumer is known as Indifference Curve.
- As all the combinations provide the consumer with an equal level of satisfaction, they prefer the goods equally.
- The same satisfaction level gained by the different combination of two goods.
- It is used to show the demand pattern & preference of a consumer for a different commodities.

Assumption :-

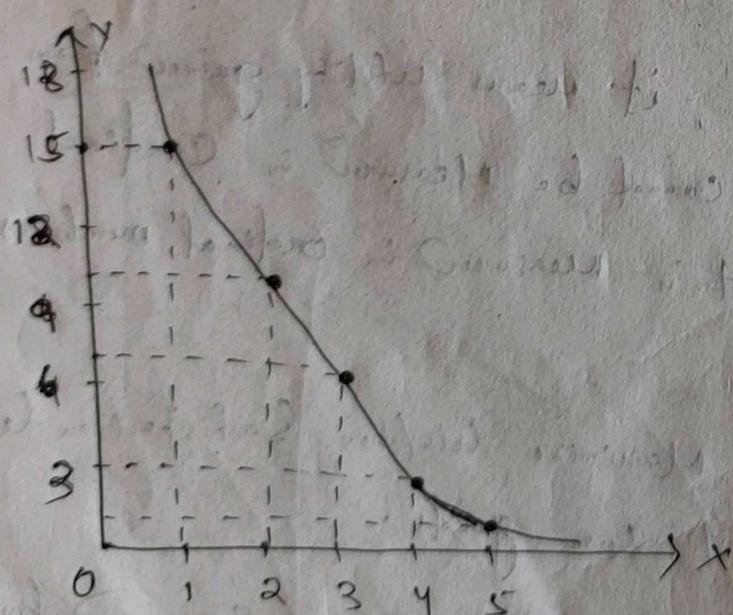
- Utility is ordinal, it means utility gained from the consumption of a good cannot be measured in cardinal numbers like 1, 2, 3 etc, it is measured in ordinal numbers like 1st, 2nd, 3rd etc.
- The consumer is to maximize his/her satisfaction level through the consumption of two goods.
- There are only two goods purchased & consumed by a consumer, because graph has two axis, and the representation of two goods will be easy.
- The price of both the goods is already given.

- The Consumer is Fully Knowledge about the Price of both goods in the market.
- The taste, income & habits of a Consumer remain same all the time.

Table :

| <u>Combinations</u> | <u>Apple</u> | <u>Banana</u> |
|---------------------|--------------|---------------|
| A | 1 | 15 |
| B | 2 | 10 |
| C | 3 | 7 |
| D | 4 | 3 |
| E | 5 | 1 |

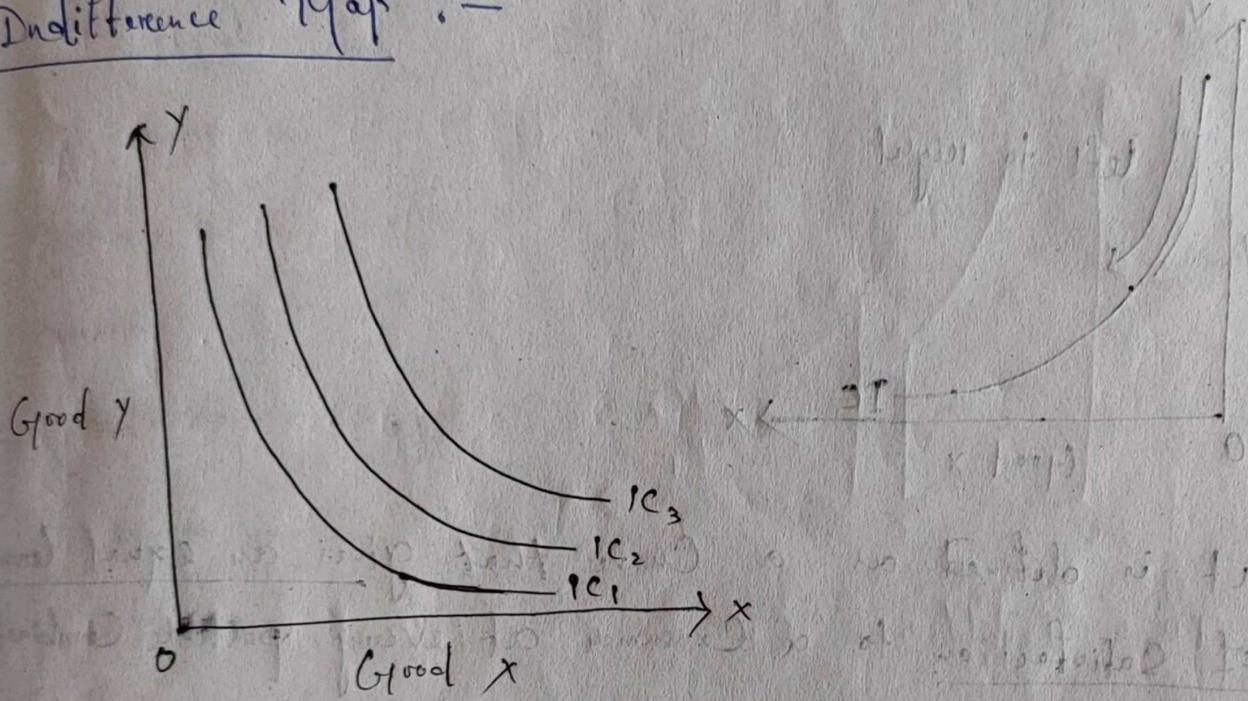
Curve :



- A process of analyzing two dimensional graphs representing two goods, one in x-axis & another on the y-axis is known as Indifference Curve analysis.

- If the graph of the Combination of goods is on the line or curve, then consumer gain the same level of Satisfaction.

Indifference Map :-



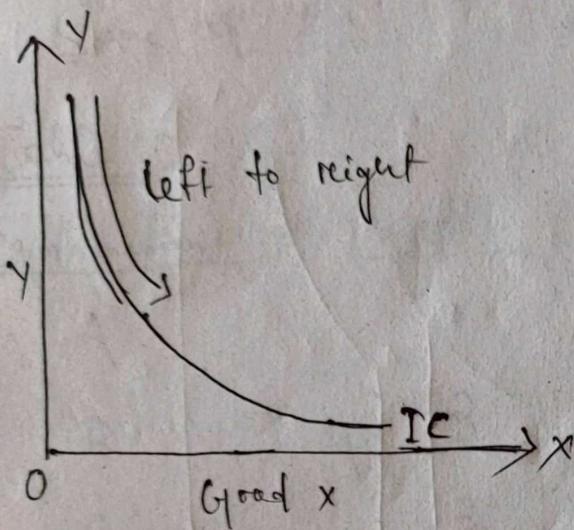
- When more than one curve is represented on a graph showing different combinations of two goods is known as

Indifference Map :

- Each curve on that graph shows one satisfaction level all along the curve.
- The combination of goods on the higher indifference curve gives a higher satisfaction level to the consumer.
- So, the highest curve of an indifference map is preferred by a consumer.

Properties :-

① Indifference Curve always slopes downwards from left to right :



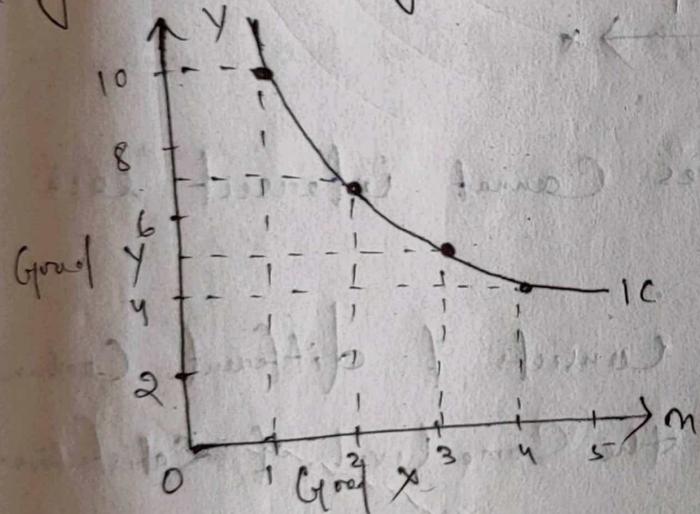
- it is defined as a Curve, that gives an equal level of Satisfaction to a Consumer at every possible Combination.
- It is possible when a Consumer is willing to sacrifice some quantity of a good to gain an extra unit of another good.
- If a Consumer having more of a good without any fall in another good, the Consumer will achieve a high Satisfaction level instead of equal.
- This fall in units of one good to gain more of another good gives a downward slope to the indifference curve.

② Indifference Curves are always convex to the point of origin:

it is based on the Diminishing Marginal Rate of Substitution and it gives a convex shape.

- It means that to gain a single extra unit of good, a consumer is willing to sacrifice more of another good.

of the diminishing rate

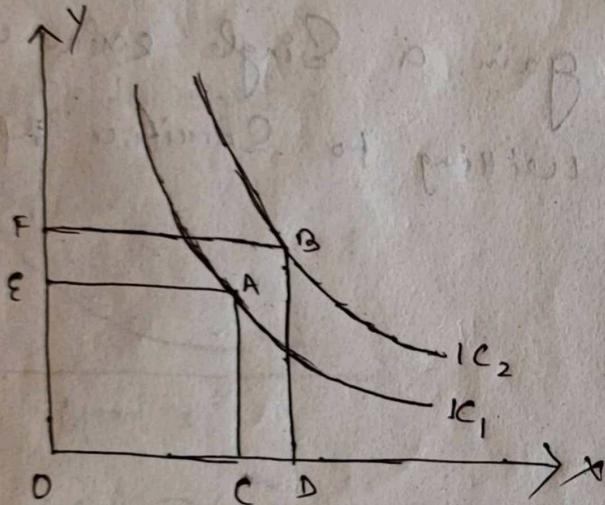


③ Higher Indifference Curves represent a higher level of Satisfaction:

- A higher indifference curve represents a higher level of Satisfaction on an indifference curve to the right of another gives more Satisfaction.

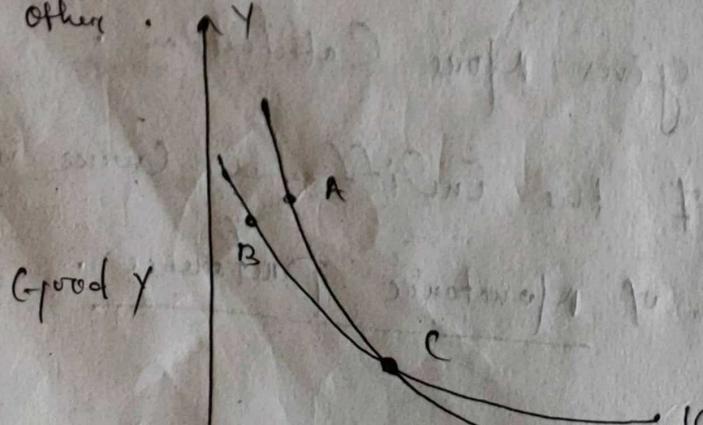
- This property of the indifference curve is based on the assumption of Monotonic Preference.

Monotonic Preference : It means, a consumer will always prefer a bundle to another more goods, and a higher indifference curve will give a higher satisfaction level.



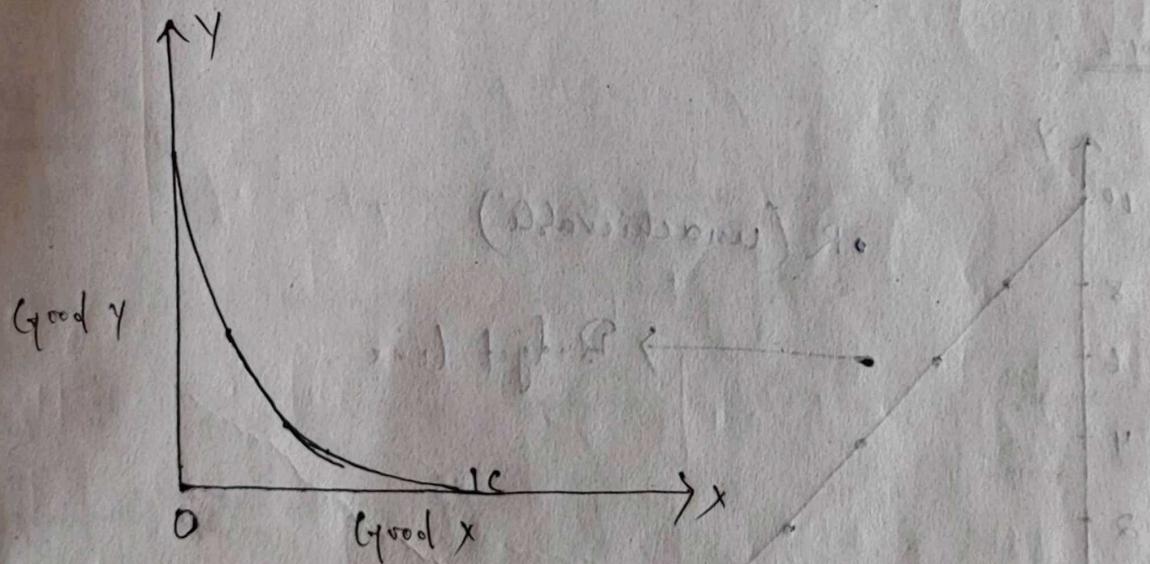
④ Two Indifference Curves Cannot intersect each other :

- An indifference curve consists of different combinations of two goods giving the same level of satisfaction. If two indifference curves intersect with each other, it would mean that one point on each curve gives the same level of satisfaction, which contradicts the fact that two indifference curves never intersect each other.



⑤ An Indifference Curve never touches either of the axes :

- the indifference curve is based on the assumption that a consumer considers different possible combinations of two goods and wants both goods.
- if an indifference curve touches either of the axes, it would mean that a consumer is consuming the whole of one good only, which is not possible.
- therefore, an indifference curve never touches either of the axes.



Budget Line : —

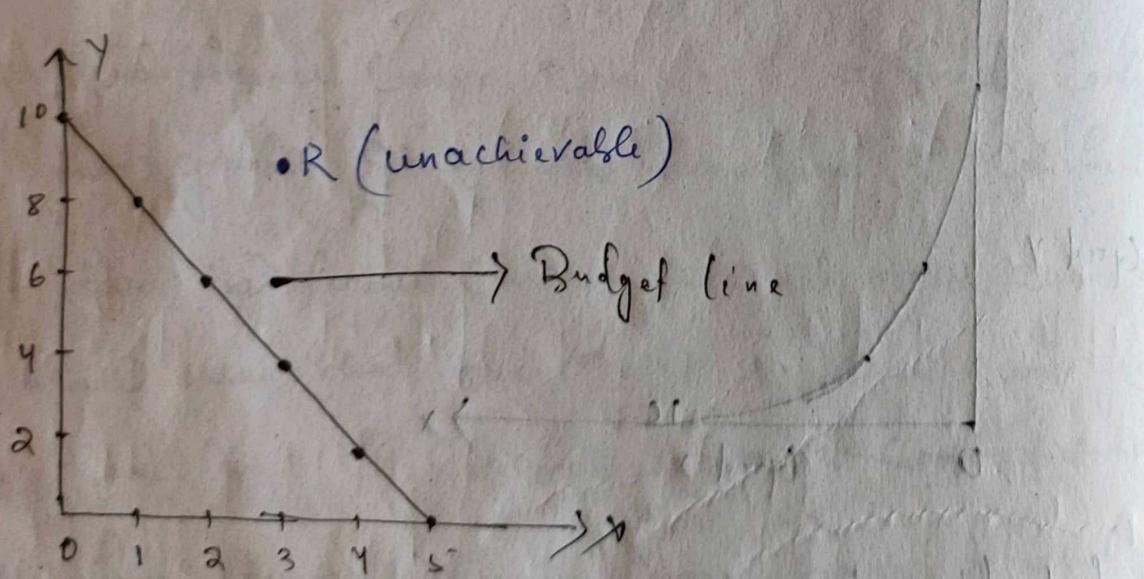
- it is a graphical representation of all possible combinations of two goods which can be purchased with given income & price such that the cost of each combination is equal to money income of the consumer.

Budget set is a set of all possible combinations of two goods which a consumer can afford given his income & prices in the market.

Table :

| Combinations | Rs 4 A | Rs 2 B | Rs 20 Y (income) |
|--------------|-----------|-----------|---------------------|
| P | 5 | 0 | |
| Q | 4 | 2 | |
| R | 3 | 4 | |
| S | 2 | 6 | |
| T | 1 | 8 | |
| U | 0 | 10 | |

Graph :



Properties : —

i) It is downward sloping.

ii) It is straight line.



Consumer Behaviour :-

- It refers that, the behaviour of a person is the way they act or behave in a certain situation.
- Every individual has different Perspectives, opinions, Views, wants, fast & needs.
- Consumer behaviour deals with the way consumer spend their income on different Services and goods.

Consumer :-

- Consumer is a person who purchases goods and services for the satisfaction of needs and wants.

Utility :-

- It is the satisfaction gained by the consumer after the consumption of that good.
- It is subjective in nature & hence, different individuals gains different levels of utility from the same good.
- The more a consumer needs a commodity after its consumption, the more will be the utility derived from that commodity.

Cardinal utility : -

- Assume the utility level can be measured & expressed in numbers.

i) Total utility :

- The total utility of a commodity's fixed quantity is the total satisfaction level derived by a consumer from the consumption of a given commodity.
- It depends on the quantity consumed by the consumer.
Ex: Mango is derived from consuming 10 units.

2) Marginal utility :

- Marginal utility of a commodity is the change in its total utility because of the consumption of one additional unit of the commodity.

$$MU_n = TU_n - TU_{n-1}$$

where, MU_n = Marginal utility from n^{th} units.

$$TU_n = \text{Total utility}$$

$$TU_{n-1} = \text{utility from } "n-1"$$

n = No. of units of consumption.

Ordinal utility : -

- We cannot measure Satisfaction level in numbers, it was the major drawback in real-life.

Substitute Goods

- These are the goods which can be used in place of each other.
- They exist a direct relationship between price of a given good and demand of the substitute good.
- Ex : Tea and Coffee
Pen and Pencil
Coke and Pepsi
- $P \uparrow D \uparrow$ (Direct)

Complementary Goods

- There are those goods which cannot be used without each other.
- There exist an inverse relationship between Price of the given good and demand of the Complementary good.
- Ex : Petrol and Car
Tea and Sugar
Bread and Butter
- $P \uparrow D \downarrow$ (inverse)

Consumer equilibrium :-

- It state that, when he gets Maximum Satisfaction from the goods and does not have to position the goods according to their satisfaction level.
- It is based on the following assumptions,
 - 1) Prices of the goods are fixed.
 - 2) The consumer has fixed income which he has to spend on all the goods.
 - 3) The consumer takes rational decisions to maximize his satisfaction.

UNIT - 3

Perfect Competition : —

- A Market Situation Where a Large number of buyers and sellers deal in a homogeneous product at a fixed price set by the Market is known as Perfect Competition.
- Homogeneous goods are goods of similar shape, size, quality etc.
- In the real world, the situation of Perfect Competition does not exist.

Ex: Agricultural goods sold by the Farmers, Goods like (wheat, rice, Sugarcane etc.)

Features :

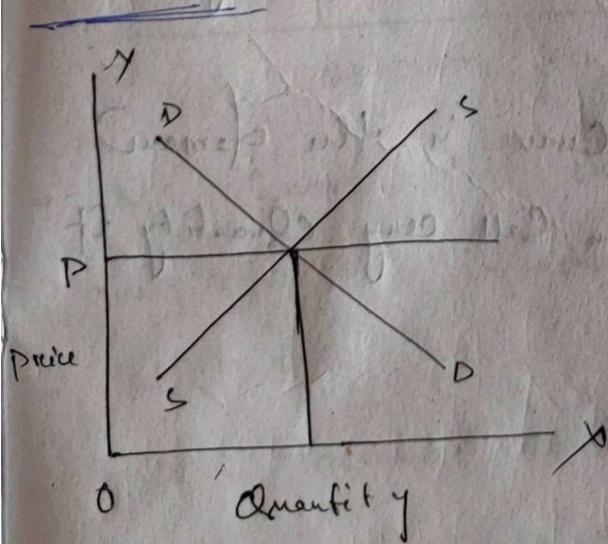
- 1) Homogenous Product
- 2) Very large numbers of buyers and sellers.
- 3) Freedom of Entry and Exit
- 4) Perfect Mobility of factors of Production
- 5) Perfect Knowledge among Buyers and Sellers
- 6) Law of Selling Costs & Transportation Costs
- 7) Seller is a Price taker because in short run time Set up the price, all firms receive it.

Short-run Equilibrium

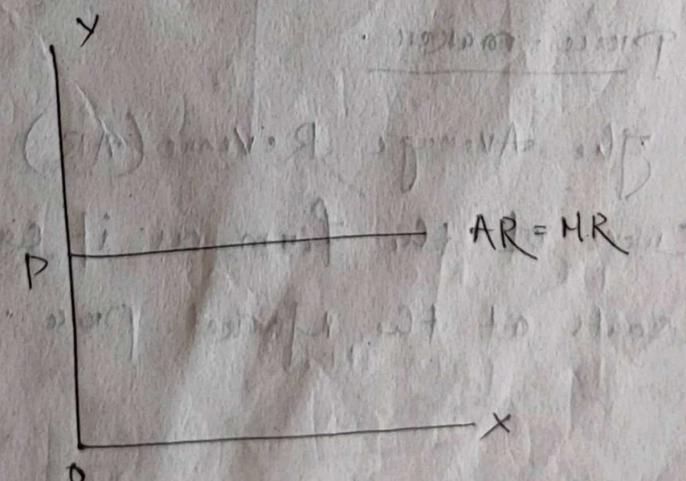
Introduction:

- In a Perfect Competitive Market, a firm cannot change the price of a product by modifying the quantity of its output.
- So, the firm can alter the quantity of its output without changing the price of the output.
- A firm is in equilibrium when its profits are maximum, which is dependent on the cost & revenue conditions of the firm.
- These conditions can vary in the long & short term.

Demand Curve of a Product in a Perfect Competition Market:



(Industry)



(Firm)

Explanation :-

- In the above fig., Price is on the Y-axis and Quantity on the X-axis.
- The left side fig. represents the industry and the right side ~~the~~ represents the firm.
- The Market demand curve is DD & the Market Supply Curve is SS.
- The point at which the Market's demand and supply curves intersect each other is the equilibrium point.
- The price at this level is the equilibrium price and the quantity is the equilibrium quantity.
- All firms receive this price in a perfect competition market.
- Firms are the price-takers and the industry is price-makers.
- The Average Revenue (AR) curve is the demand curve of the firm as it can sell any quantity if wants at the market price.

Short-run Equilibrium :-

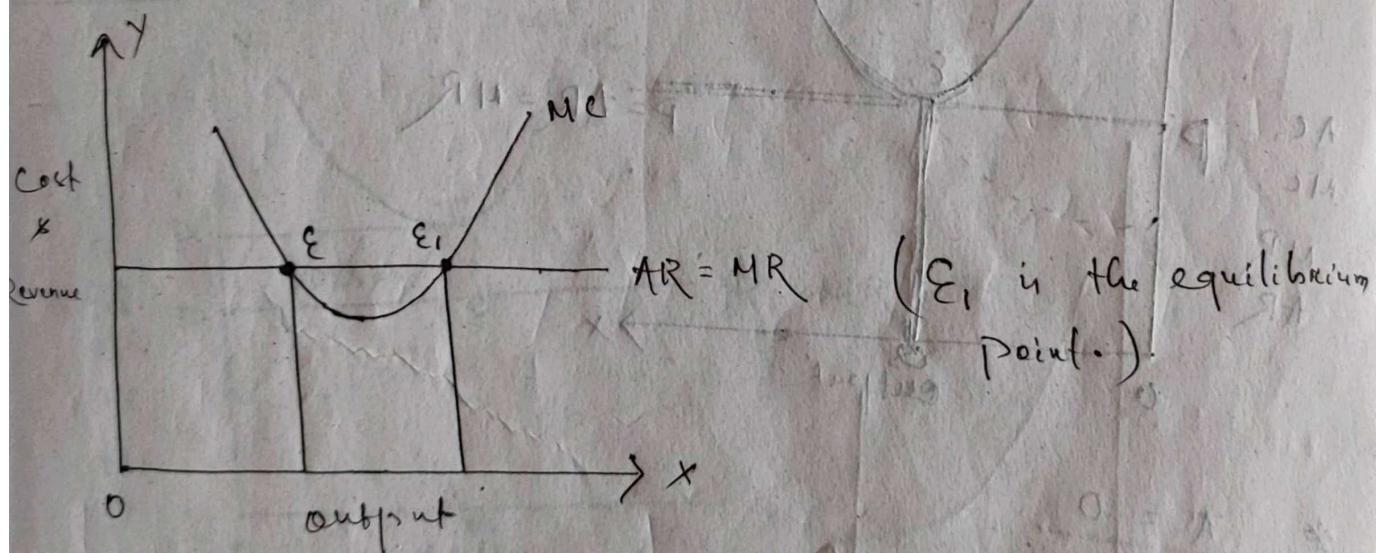
Assumptions :-

- the price of the product is given, and the firm can sell any quantity at that price.
- the size of the plant of the firm is constant.
- the firm faces given short-run cost curves.

Conditions for the equilibrium of a firm :-

1) $MC = MR$

2) MC curve cuts the MR curve from below.

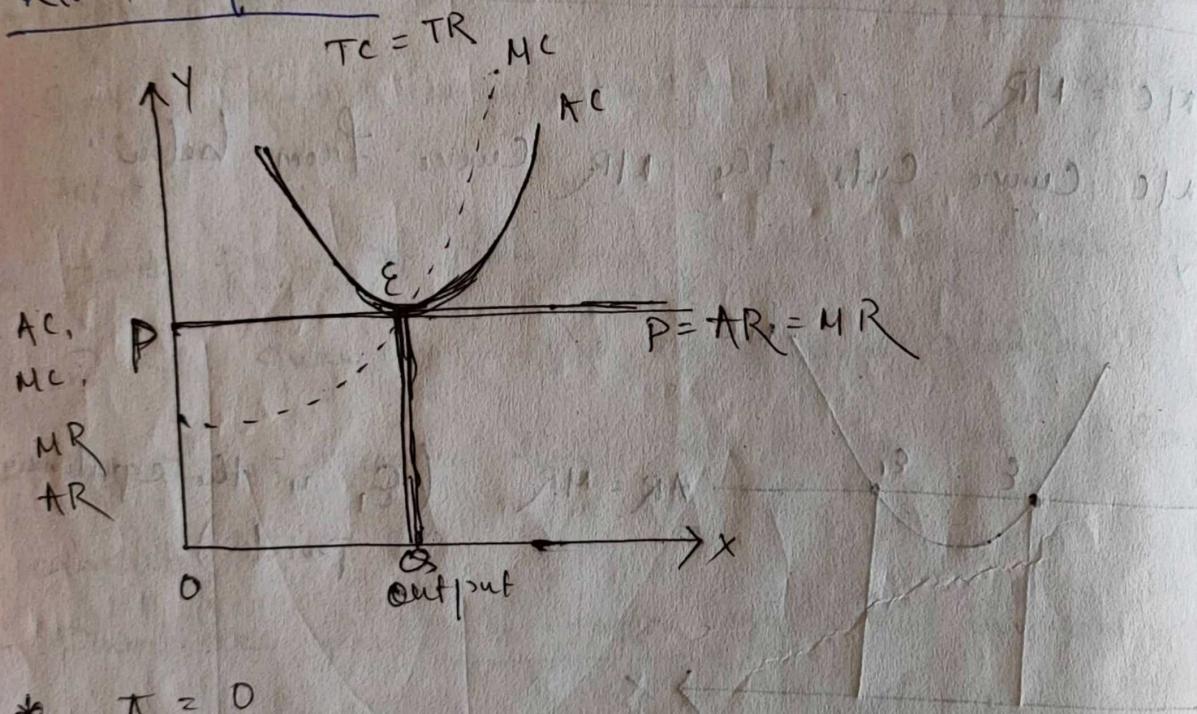


- MC curve after intersecting the MR curve from below and after the intersection lie above the MR curve.
- $MR > MC$
- This is because additional output adds more revenue than costs and increases its profits.
- Since, it is a Perfectly Competitive Market, the demand for the product of the firm is

- Perfectly elastic. So, it can sell all its output at the market price.
- therefore, its demand curve runs parallel to the x-axis throughout its length and MR curve coincides with the AR curve.

Price output determination :-

Normal Profit :



$$* \underline{\pi = 0}$$

$$\pi = TR - TC = 0$$

$$TR = TC$$

$$* MR = MC$$

MC cuts MR

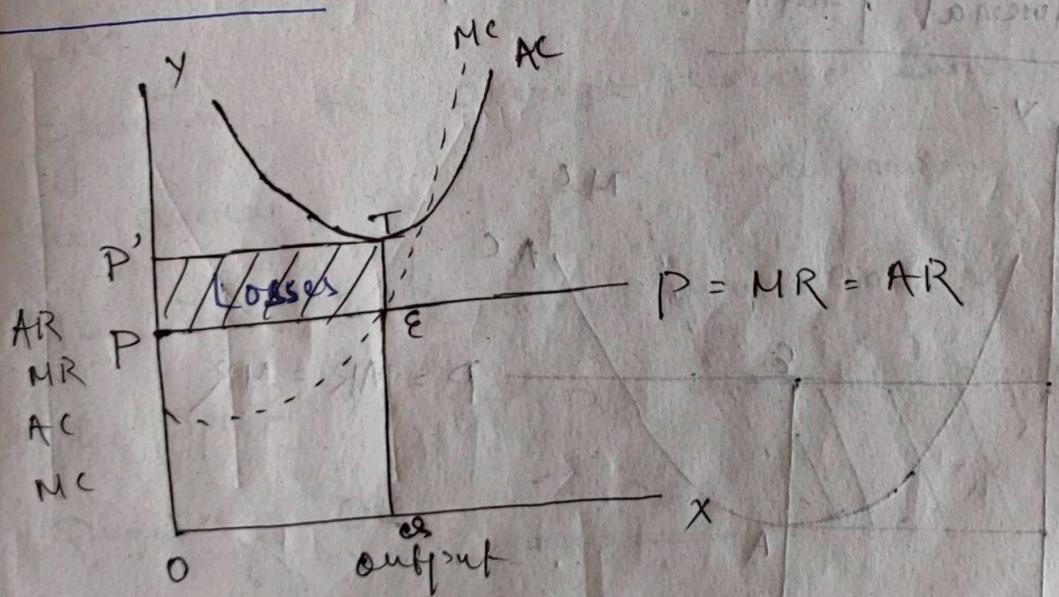
$$* TR = OQ \times OP = OQEP$$

$$TC = OQ \times OP = OQEP$$

- In the above fig., cost and revenue are on the Y-axis and the quantity is on the X-axis.
- Here, Marginal Cost cut the Marginal Revenue curve from below, point at E.
- At point 'E', P is the equilibrium price and Q is the equilibrium quantity.

- $AR = MR$
- it means firm is earning a normal profit.

Normal Loss:



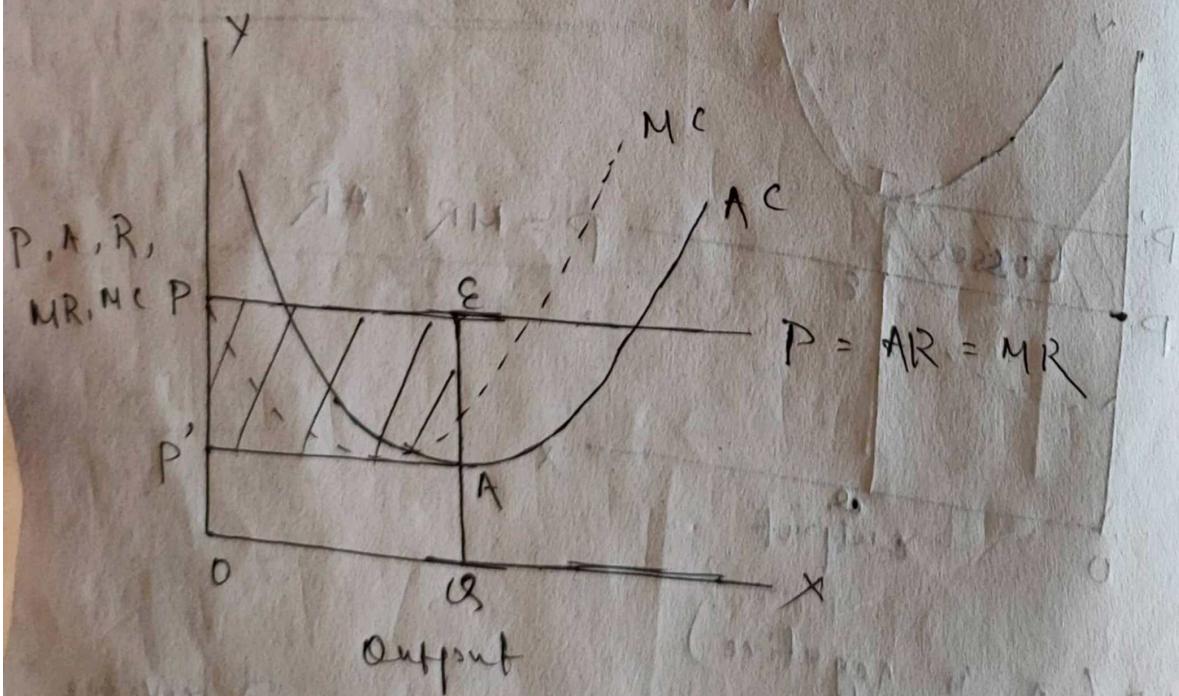
* $\pi < 0$ (π is negative)

- In the above fig., the cost and revenue curves are on the Y-axis and the quantity demanded is on the X-axis.

- the Marginal Cost Curve cut the Marginal Revenue Curve from below at point E, the equilibrium point.

- Corresponding to point 'E', P and Q are the equilibrium price and quantity respectively.
- Also, corresponding to Q , the average cost is more than the average revenue.
- Here, the cost is more than the revenue. So, as per the fig. the unit revenue OP & unit cost is OP' .
- This means unit loss is PP' .

Super-normal profit :-



$$*\pi = TR - TC$$

$$\pi > 0$$

$$TR > TC = \pi > 0$$

$$* TR = Q \times OP = OPQ$$

$$\pi = TR - TC$$

$$* TC = OP' \times Q = OP'Q$$

$$\pi = QRP'$$

- in the above fig., the revenue is OP , while the cost is OP' .

- So, the ~~cost~~ revenue is high in comparison to cost.

- therefore, the average revenue curve lies above the average cost curve corresponding to Q_1 .

- the firm is earning Super-normal Profits.

- the profit is $P'P$ and the profit is for

- quantity Q_1 is $\frac{P'P}{R}$.

Monopoly : — (Price-Maker)

mono - Single

Poly - Seller.

- The term monopoly means a Single Seller.
- It refers to a market where Single Seller, large no. of buyer and a product ~~without~~ ^{availability of close} Substitute in the market.
- There is no entry and exist or Strong barriers to entry and exist within the market.
- Also, Seller is a price maker.

Features : —

i) Single Seller and Several Buyers :

- It is a Single Seller & Several buyers.
- In Monopoly, there is no difference between the firm and the industry, Because there is only one producer/Seller.
- The firm's demand Curve is the industry's demand Curve.
- Since, there are Several buyers, one individual buyer cannot affect the price in a monopoly market.

2) No Close Substitute :

- The product that the Monopolist produce has no close Substitute.
- If a close Substitute exists, then the Monopoly Cannot exist.
- A Monopoly can only exist when the cross-elasticity of the product that the Monopolist produces is zero.

3) Entry barriers to the entry of new firms :

- If the Monopolist firm is earning Super normal profits, new firms face many difficulties in trying to enter the industry.
- There are Many reasons for this like legal barriers, technology, or a naturally occurring substance which others cannot find.

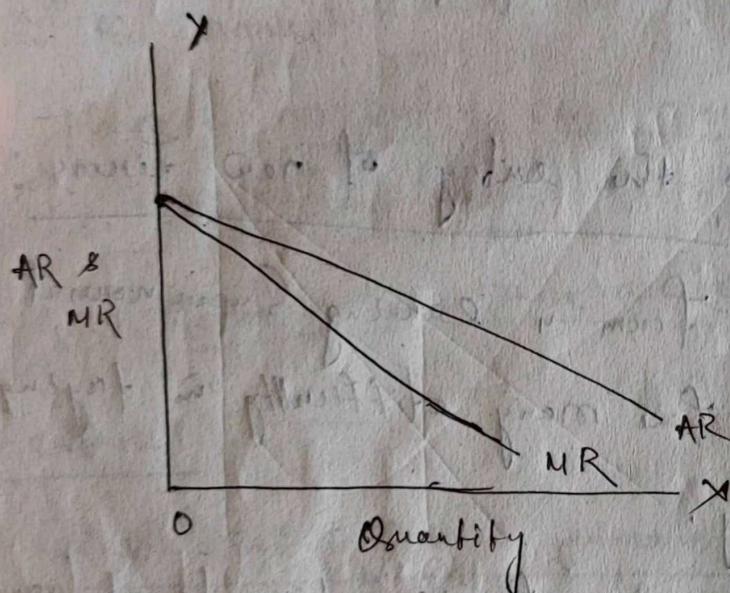
Revenue Curves under Monopoly :

- It is a Price - maker not a price - taker.
- So, a monopolist can increase or decrease the Price.
- When the price changes, average revenue, & Marginal revenue changes too.

Tahle :

| <u>unit</u> | <u>price</u> | <u>TR</u> | <u>AR</u> | <u>MR</u> |
|-------------|--------------|-----------|-----------|-----------|
| 1 | 10 | 10 | 10 | 10 |
| 2 | 9 | 18 | 9 | 8 |
| 3 | 8 | 24 | 8 | 6 |
| 4 | 6 | 28 | 7 | 4 |

Curve



Here, $AR > MR$

- In the above fig., both the revenue Curves (AR & MR) are sloping downwards.
- Because, decrease in price.
- If a Monopolist wants to increase his Sales, then he must reduce the price of his product.
 - * the existing buyers to purchase more.
 - * new buyers to enter the market.

Price determination under Monopoly :-

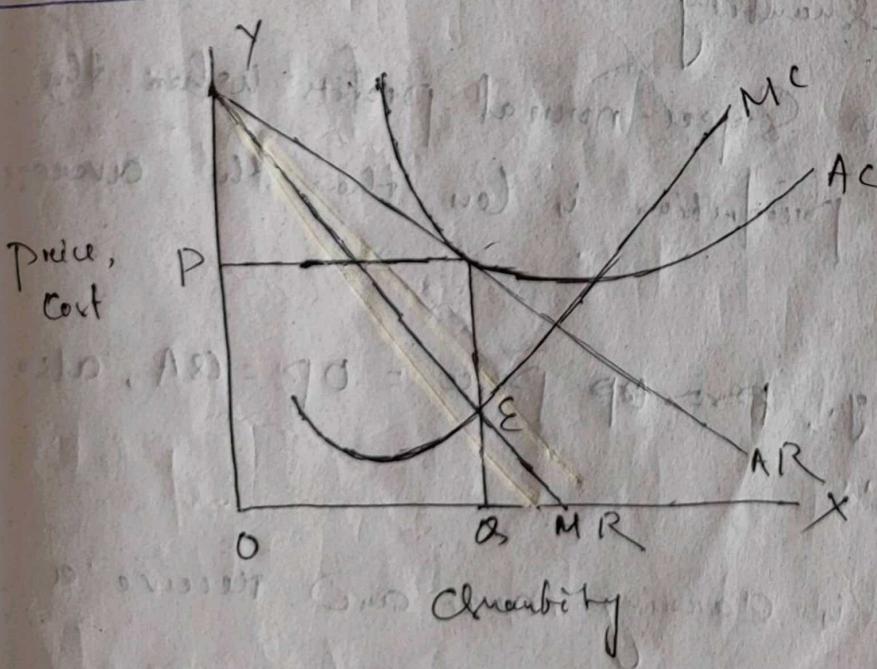
Equilibrium in Monopoly :-

- The conditions for equilibrium in Monopoly are same as those under perfect competition!
- The Marginal Cost (MC) is equal to the Marginal Revenue (MR) & the MC curve cuts the MR curve.

Three possibilities for a firm's Equilibrium :-

- 1) Normal Profits - Average Cost = Average Revenue
- 2) Super-normal Profits - Average Cost < Average Revenue
- 3) Losses - Average Cost > Average Revenue

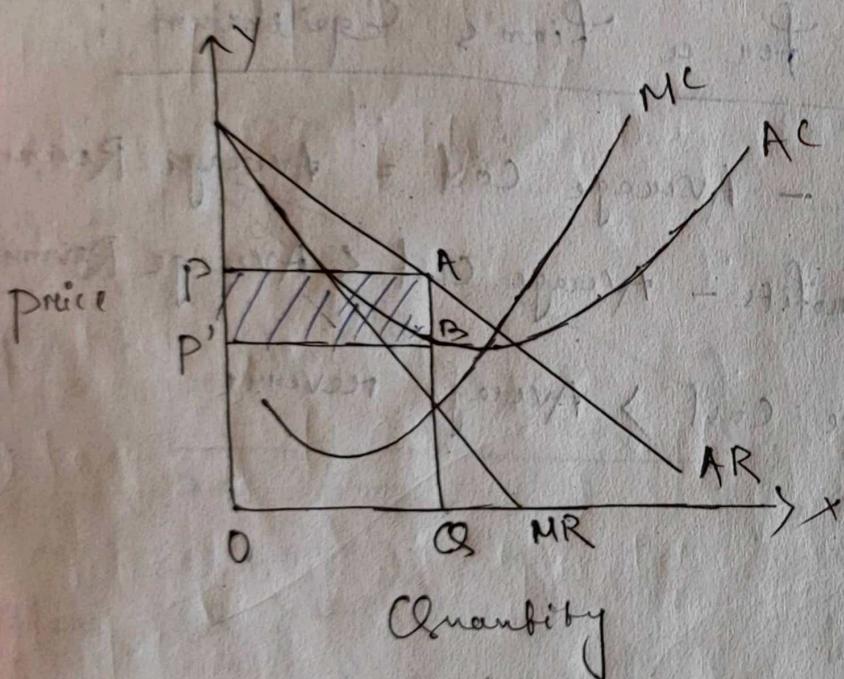
Normal Profits :



- A firm earns normal profits when the average cost of production is equal to the average revenue.

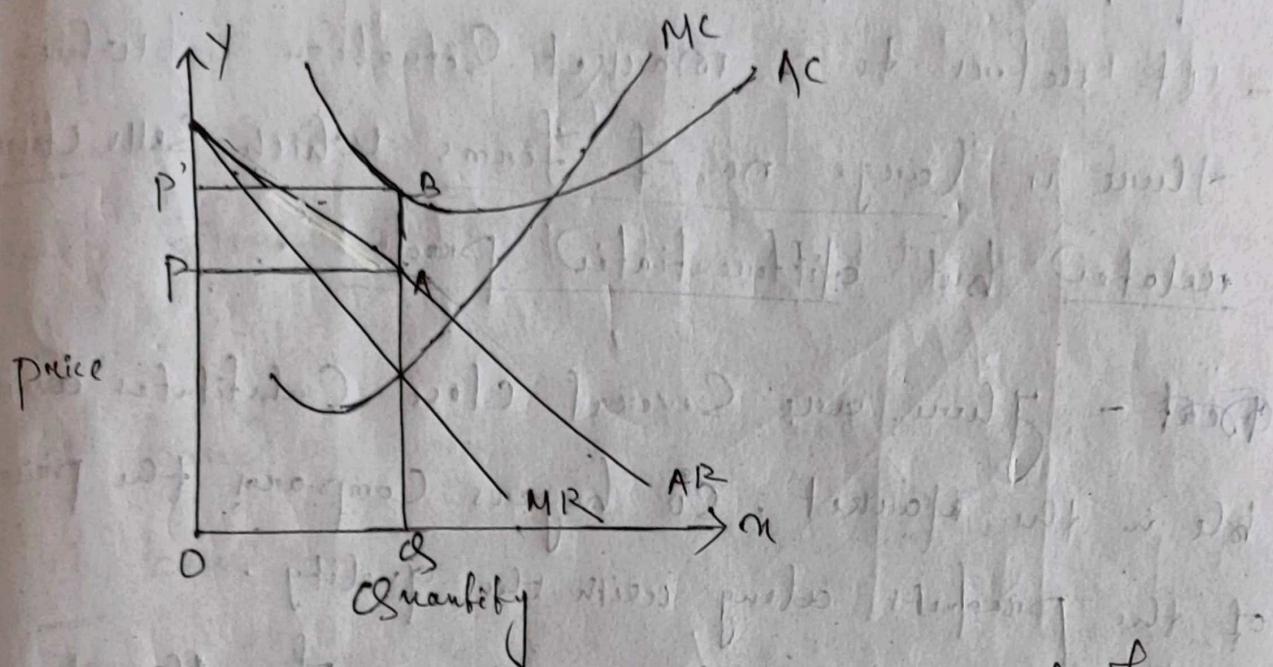
- in the above fig., MC curve cuts the MR curve at the equilibrium point E.
- Also, the AC curve touches the AR curve at a point corresponding to the same point.
- So, the firm earns normal profits.

Super-normal profits:



- A firm earns Super-normal profits when the average cost of production is less than the average revenue.
- in the above fig., $\text{Average Price} = OP = OA$, also the cost = OP' .
- So, the firm is earning more and receive a larger cost.
- if the profit is $\underline{OP - OP'} = PP'$

Losses : -



- A firm earns losses when the average cost of production is higher than the average revenue.
- In the above fig., average cost curve lies above the average revenue curve for the same quantity.
- The average revenue = O/P' , and average cost = O/P' .
- So, the firm is earning an average $O/P - P'$.

Monopolistic Competition:

- It refers to a market situation in which there is large no. of firms which sells closely related but differentiated product.
- Point** - There are several close Substitutes available in the market, so buyers compares the prices of the products along with the quality.
- So, there is competition between sellers for the market share.

Features:

- 1) Large no. of Sellers: There are large no. of sellers selling closely related but differentiate products.
- Every firm under this market ~~has limited control~~ is independent and has a limited control over the market price of the product.
- 2) Product Differentiation:
 - The product of a firm is close to the product of another firm, but it is not a perfect Substitute.
 - The differentiate Product is produced by different manufacturers by different firms and are also willing to pay different prices for the same differentiate product.

product produced by different firms. The benefit of product differentiation is, it gives monopoly power to a firm through which it can easily influence the market price of its product.

on

- if based on their brand, colour, shape, size etc.
- if based on real or imaginary differences
- Real differences includes : colour, shape, flavour, warranty period, services etc.
- imaginary differences includes : selling costs through advertisements etc.

Ex : Cars (Ford, Hyundai, TATA Motors etc.)

3) Freedom of Entry or Exit :

- It means, there is no artificial restrictions to the entry of new firm or exit of an existing firm.
- This ensures that abnormal profits & abnormal losses do not exist.
 - Excess amount of earning
 - shortage in the amount of earning from total production.

4) Selling Costs:

- It refers to the expenses on Marketing, Sales Promotion and advertisement.
- Under Monopolistic market, products are differentiated and the differenti are made known to the buyer to selling costs.

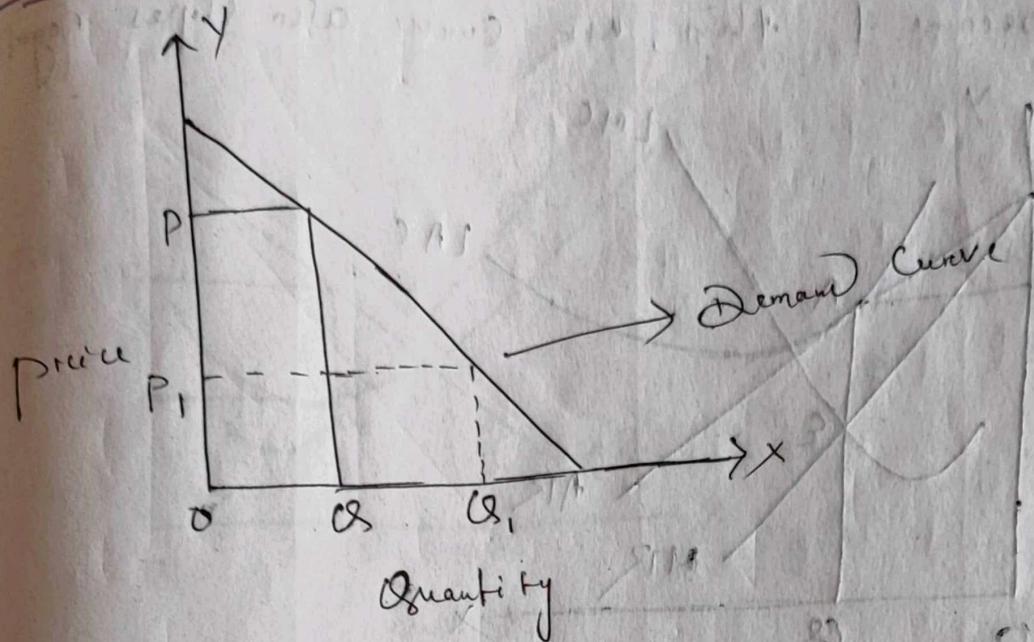
5) Pricing Decisions:

- They are neither price-makers nor price-takers.
- The firms produce unique & differentiated products from each other, each firm has partial control over the price of the product.
- It depends upon the strength of the buyer.

6) Lack of Perfect Knowledge:

- The buyers and sellers do not have perfect knowledge about the market conditions.
- Due to this, a high priced product is preferred by the consumers even though other products provide the consumer with the same quality at a low price.

Demand Curve :

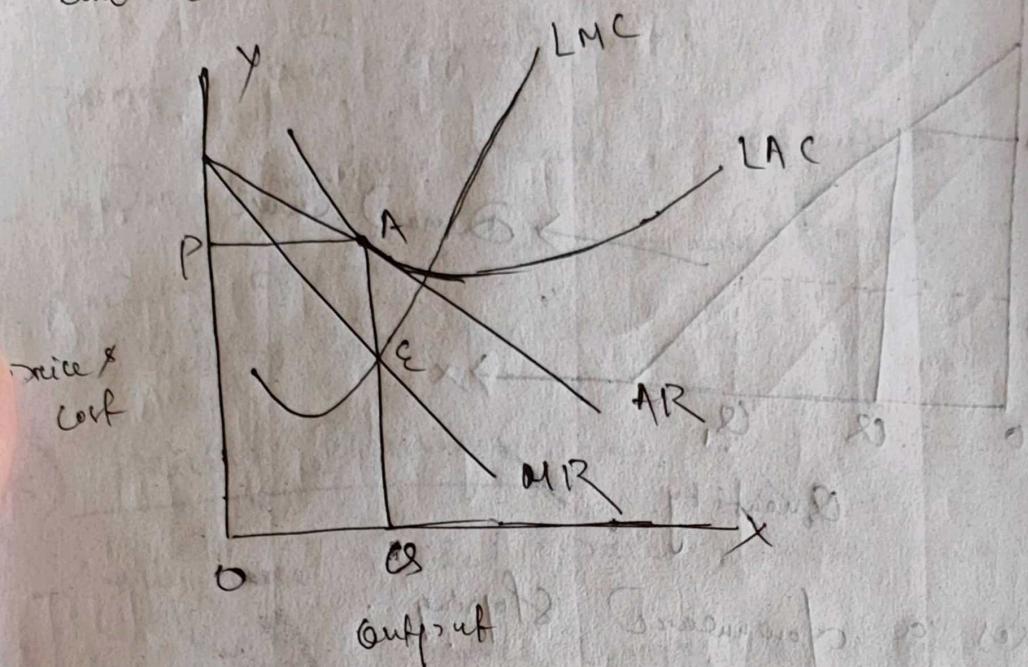


- It makes a downward sloping.
- It means Monopolistic firm can sell more product when it reduces its price.
- Quantity is measured along X -axis and Price is measured along Y -axis.
- At price OP , the seller can sell OQ_s quantity of the output.
- When price reduced to OP_1 , the demand of quantity increase to OQ_1 .

long-run Equilibrium :

- Due to free entry and exit into the Monopolistic Market, the firms earn normal profits.
- It can sell more output by reducing the price of the product.

- its demand curve or AR curve slopes downward and because of this, MR curve also slopes negatively.



- In the above graph, LMC and LAC are the long-run Marginal Cost Curve and Long-run Average Cost Curve respectively.

- The condition of this equilibrium is,

$$i) MR = LMC$$

$ii) LMC$ curve cuts the MR curve from below, at

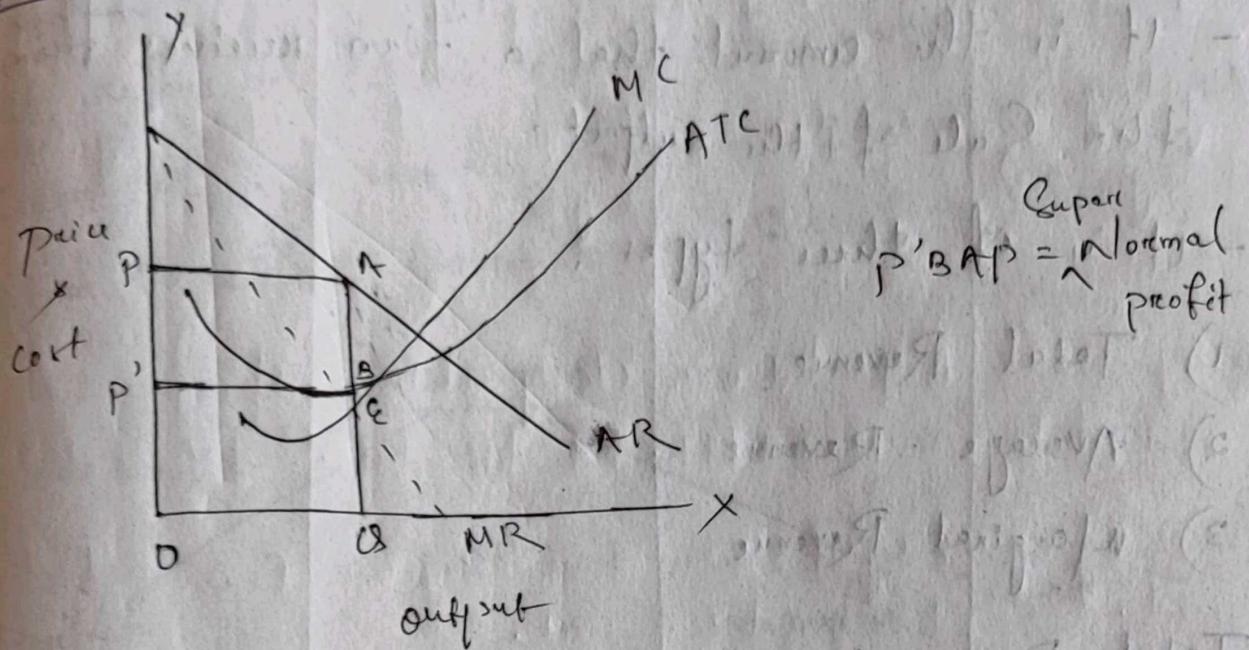
the point E.

- E is the equilibrium point of the firm where it sells equilibrium output OQ at the equilibrium price of OP.

- Here, LAC of the firm is equal to AR.

- So, the firm will only earn normal profits.

Short-run:



$$i) MR = MC$$

ii) MC curve cuts the MR curve at the profit-maximizing output level.

$$P \times Q = TR$$

$$ATC = AV$$

$$TR - ATC = AP$$

Revenue : — (income)

- It is the amount that a firm receives from the sale of the output.
- It is of three types :
 - 1) Total Revenue
 - 2) Average Revenue
 - 3) Marginal Revenue

Total Revenue :

- The total Revenue of a firm is the amount received from the sale of the output.
- TR depends on the Price per unit & Quantity.

$$TR = Q \times P$$

Average Revenue :

- It is the revenue that a firm earns per unit of ~~total~~ product sold.

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

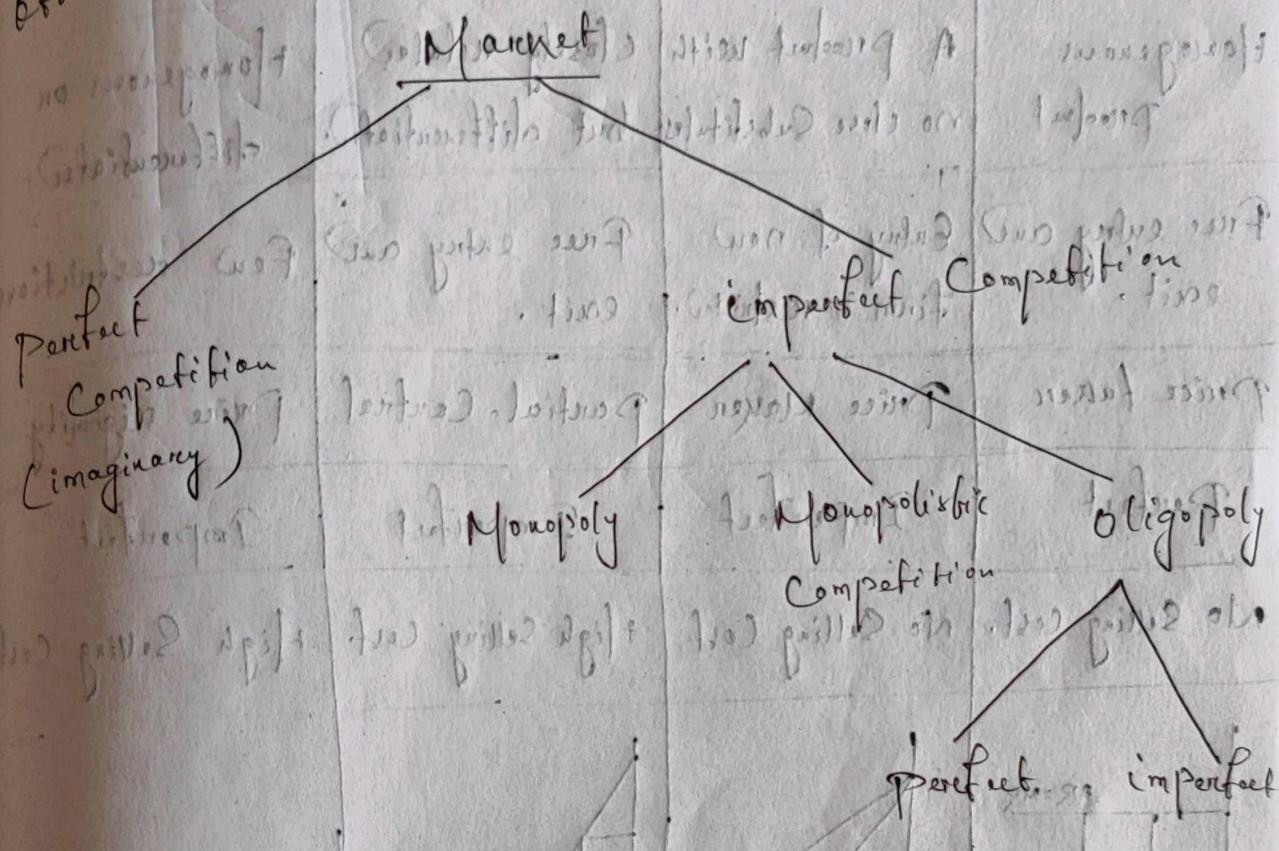
Marginal Revenue :

- It is the amount of Money that a firm receives from the sale of an additional unit.

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

Market
Area

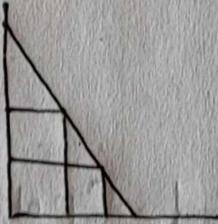
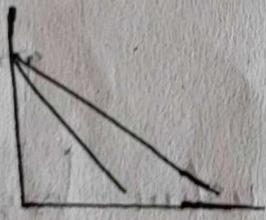
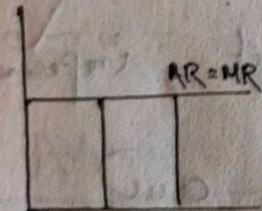
It refers to whole region where buyers and sellers of a commodity are in contact with each other to effect purchase and sale of a commodity.



- It is an actual spot where buyers and sellers gather together to trade products.
- It refers to where the exchange of the commodity happens.

→

| Perfect Competition | Monopoly | Monopolistic competition | Oligopoly |
|---------------------------------------|---|-------------------------------------|-------------------------------|
| Very large no. of buyers and sellers. | Single Seller | Large no. of buyers & sellers | Few big sellers |
| Homogeneous product | A product with no close substitutes but differentiated. | Closely related but differentiated. | Homogenous or differentiated. |
| Free entry and exit. | Entry of new firm is unrestricted. | Free entry and exit. | Few restrictions. |
| Price taker | Price Maker | Partial Control | Price rigidity |
| Perfect | Imperfect | Imperfect | Imperfect |
| No selling cost. | No Selling Cost. | High Selling Cost. | High Selling Cost. |



Price discrimination

- When a Seller charge different price for the same commodity from different consumer.
- It refers to the Monopoly Seller who charge different price from Person to Person & time to time & place to place.
- It was developed by A.C. Pigou.

Classification

- 1) Personal : It is Personal when different prices are charged for different Persons.
- 2) Local : It is Local when the Price varies according to Locality.
- 3) According to trade or use ; Different Prices are charged for different uses.

Ex : electricity i.e it is cheap for domestic but high price for industries.

Conditions :-

- Difference in Elasticity of Demand
- Market Imperfections
- Differentiated Product
- Legal Sanction
- Monopoly existence.