Chapter

Theory of Consumer Behaviour

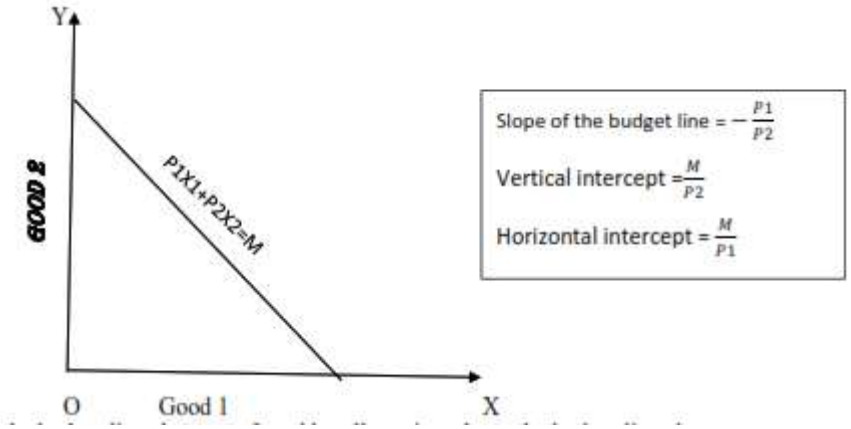
BUDGET SET:

- ✓ The set of two goods available to buy a consumer with his income is called the budget set.
- ✓ The equation of the budget set is P1X1 + P2X2 ≤ M. Here P1 Price of the first good. X1 is the amount of good

  1.P2 is the price of second good and X2 is the amount of second good. There is an inequality in the budget set equation is called a budget constraint. P1, P2, and M are the budget constraints.

BUDGET LINE:

- ✓ The line shows the locus of points of budget sets which costs exactly equal to income. The equation of the budget line is P1X1 + P2X2 = M. Here Is the price of the first good, P2 is the price of second good, X1 amount of first good, X2 amount of second good and M is consumer's income? The following is a budget line.

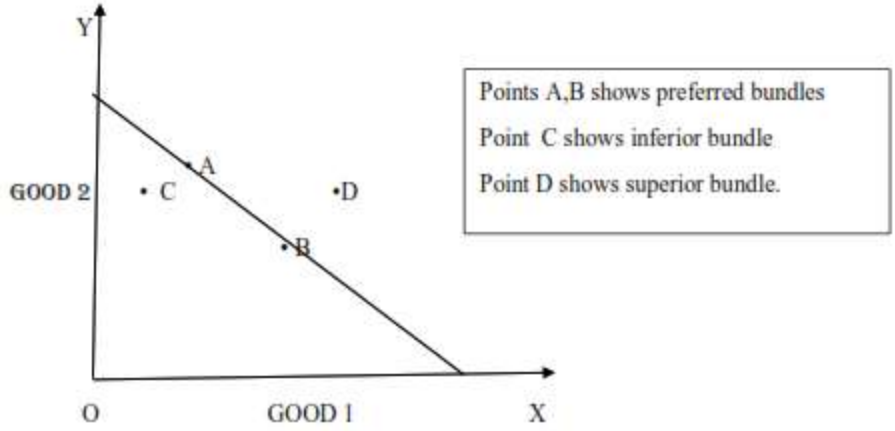


Slope of the budget line $= -\frac{P1}{P2}$

Vertical intercept $= \frac{M}{P2}$

Horizontal intercept $= \frac{M}{P1}$

- ✓ Points on the budget line show preferred bundle, points above the budget line shows superior bundle, and point below the budget line shows inferior bundles. This is shown in the following diagram.



PRICERATIOOR SLOPEOFTHEBUDGET LINE:

The amount of Good 2 sacrificed to buy one extra unit of Good 1 is called the price ratio or slope of the budget line.

$$\frac{\Delta X2}{\Delta X1} = -\frac{P1}{P2}$$

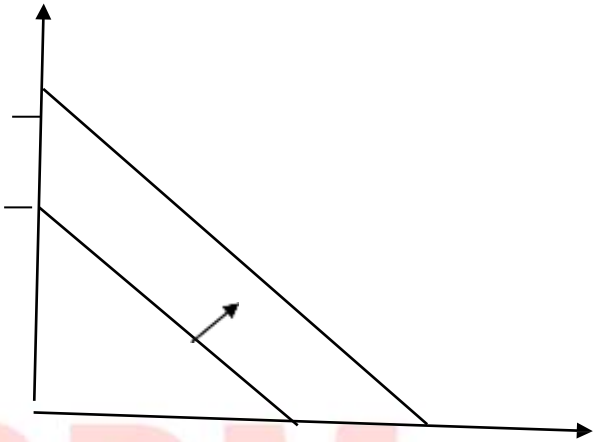
CHANGES IN BUDGET SET:

Changes in the budget line occur due to the changes in the price of the commodity or changes in the income of the consumer.

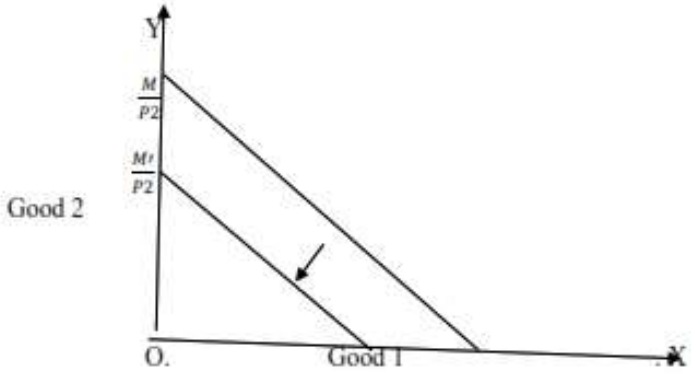
CHANGES IN THE INCOME OF THE CONSUMER:

There are two types of changes in the income of the consumer. They are

1. Increase the income of the consumer: When the income of the consumer increases, the consumer can buy more of two goods. Then the budget line shifts towards right. This is shown in the following diagram.



2. Decrease in the income of the consumer: When the income of the consumer decreases, the consumer can buy less of two goods. Then the budget line shifts towards left. This is shown by the following diagram

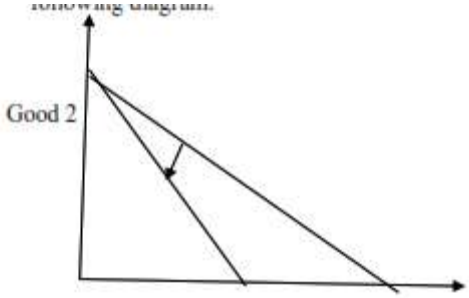


CHANGES IN THE PRICE OF FIRST GOOD:

There are two types of changes that occur in the price of the first good. They are the following.

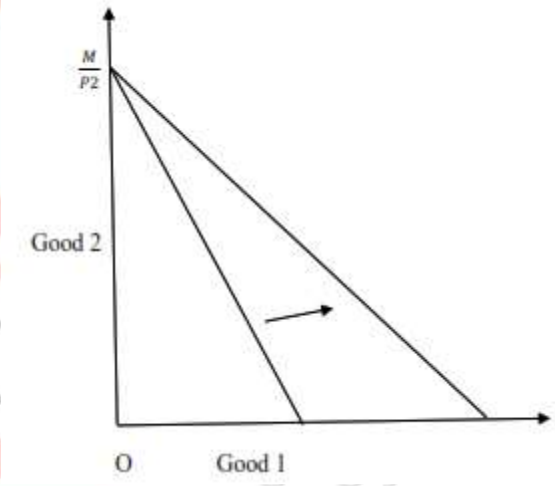
- Increase in price of first good:

  When the price of first good increases from P1 to P'1, the budget line shift towards left only in the X-axis. This is shown in the following diagram.



- DECREASE IN PRICE OF FIRST GOOD:

  When the price of the first good decrease from P1 to P'1, the budget line shift towards right only in the X-axis. This is shown by the following diagram

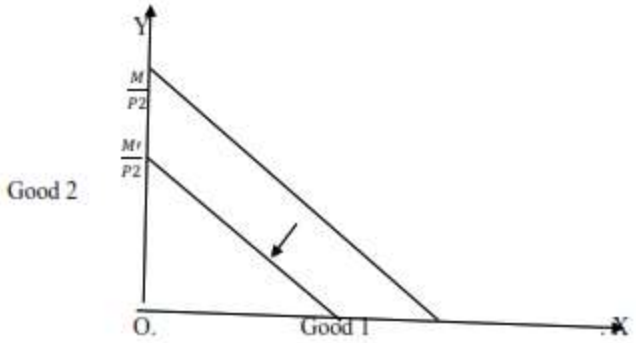


CHANGES IN THE PRICE OF SECOND GOOD:

There are two types of changes that occur in the price of the second good. They are the following.

- **INCREASE IN PRICE OF SECOND GOOD:**

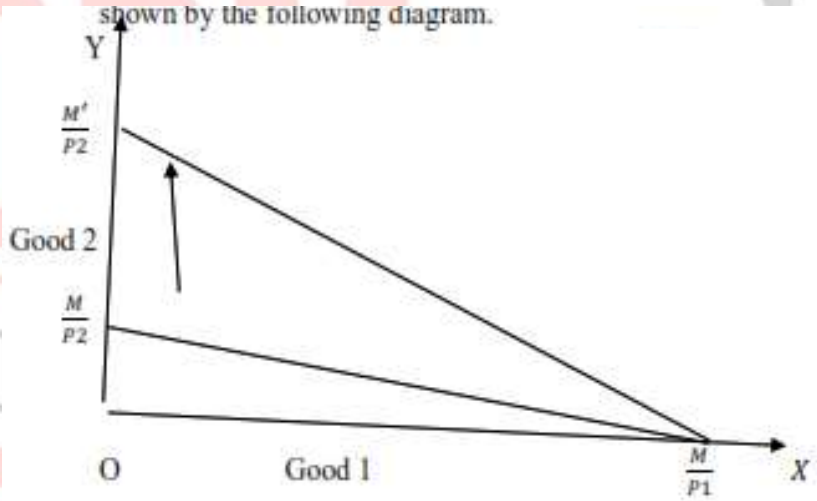
  When the price of Second good increases from P2 to P'2, the budget line shift towards left only on the Y-axis. This is shown by the following diagram



- DECREASE IN PRICE OF SECOND GOOD:

  When the price of the Second good decrease from P2 to P'2, the budget line shift towards left only on the Y-axis. This is shown by the following diagram

shown by the following diagram.

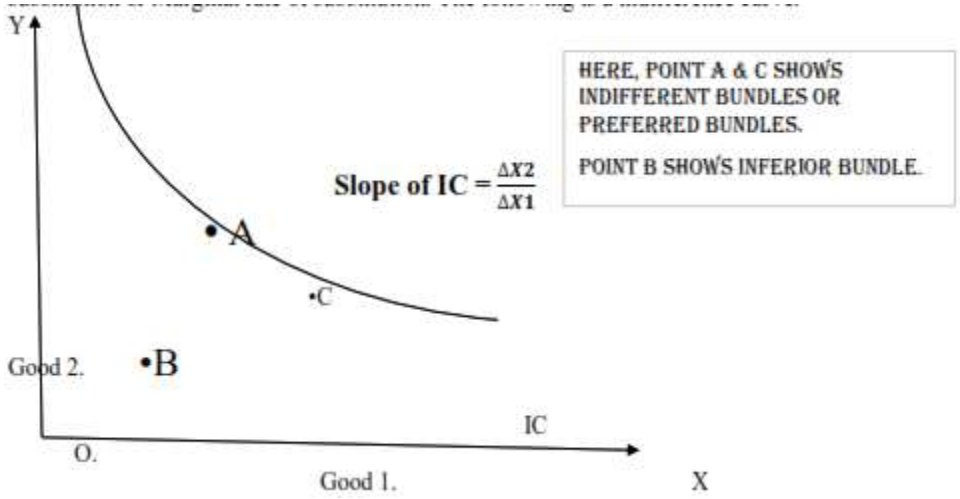


Monotonic preference:

- Between any two bundles, the consumer prefers the bundle which has more of at least one of the goods and no less of the other goods as compared to other bundles. Such preferences of the consumer are called monotonic preferences.

INDIFFERENCE CURVE:

It is the combination of two goods, which give the same level of satisfaction to the consumer. The slope of Indifference curves is equal to the rate of substitution or Marginal rate of substitution. The following is an indifference curve



Properties of Indifference curve:

1. IC are convex to the origin because of Diminishing Marginal Rate of substitution. (DMRS)
2. IC Slope downward from left to right.
3. Towards the right, they show a higher level of satisfaction.
4. Indifference curves do not intersect with each other.
5. A group of Indifference curves is called Indifference Map.

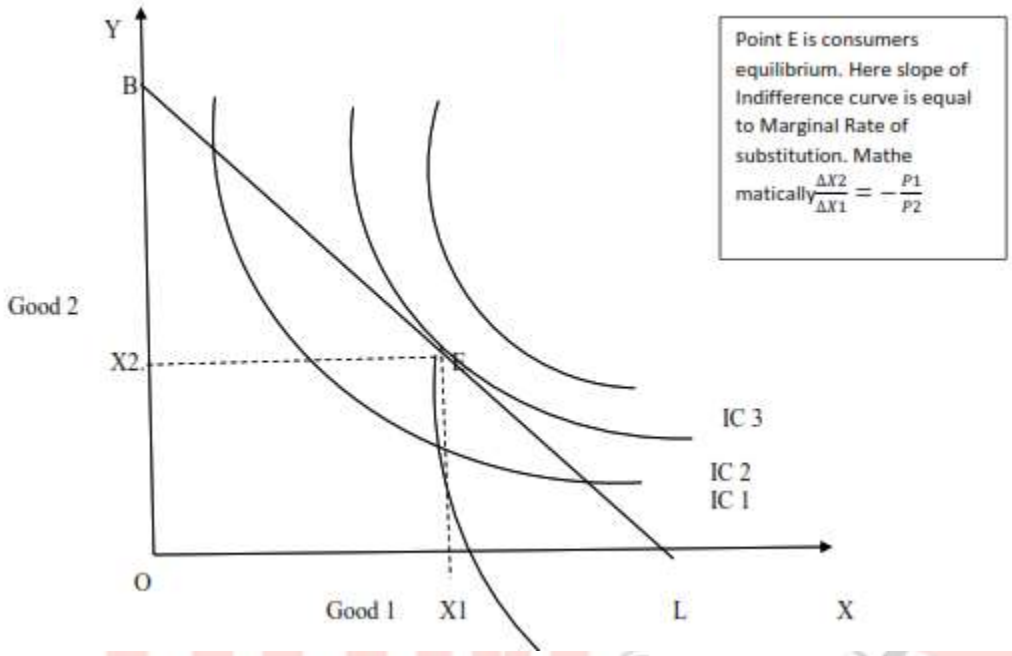
UTILITY:

Want satisfying capacity of a commodity is called utility. The total satisfaction gets from consuming all bundles of commodities is called Total Utility. The additional utility gets from the consumption of an additional unit of a commodity is called Marginal utility. The utility can be measured with the unit UTILE.

CONSUMERS EQUILIBRIUM OR CONSYNERS OPTIMUM:

- It is a point where the consumer can enjoy maximum satisfaction with his income.
- In other words, it is a point where a consumer can enjoy maximum satisfaction with his income. In other words, it is a point where the budget line is tangent to the budget line. At this point MRS = Slope of the budget line.

Mathematically it can be express as $\frac{\Delta X2}{\Delta X1} = -\frac{P1}{P2}$. It can be shown as follows.



In the above diagram, 'BL' represents the budget line. IC1, IC2, IC3 are the Indifference curves. Point ' E' represents the consumer's equilibrium. At point E the budget line is tangent to the indifference curve. Here the slope of the Indifference curve is equal to the Marginal Rate of substitution.

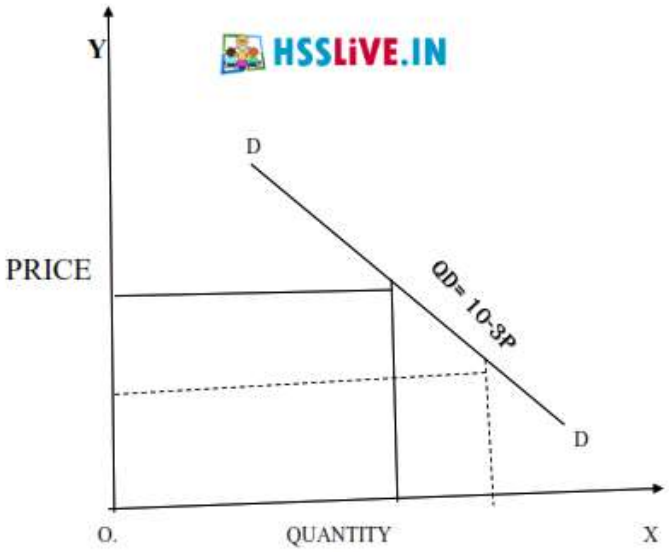
DEMAND: Demand is a desire backed by ability and willingness to pay for a commodity. The functional relationship between demand and demand determining factors is called the demand function. Algebraically q= f (P, Pr, M, T).

LAW OF DEMAND: If other things remaining the same, the price of a commodity increases its quantity demanded will be Decreases and vice versa. This inverse relationship between price and quantity is called Las of Demand. The other things mean Income of the consumer, price of related goods, Taste and preferences of the consumer, Climate, Fashion, etc. These factors are called demand determining factors.

DEMAND CURVE: The graph, which shows the inverse relationship between price and quantity demanded is called Demand Curve. The Demand Curve is a downward sloping curve because of the following reasons

1. Price effect: Change in demand due to the change in price is called price effect
2. Substitution effect: It is the effect between two commodities. If the price of one commodity increases, the quantity demanded of the other commodity increases.
3. Income effect: Change in the quantity demanded of a commodity due to the change in the real income of the consumer. It is called the substitution effect

The following is a demand curve

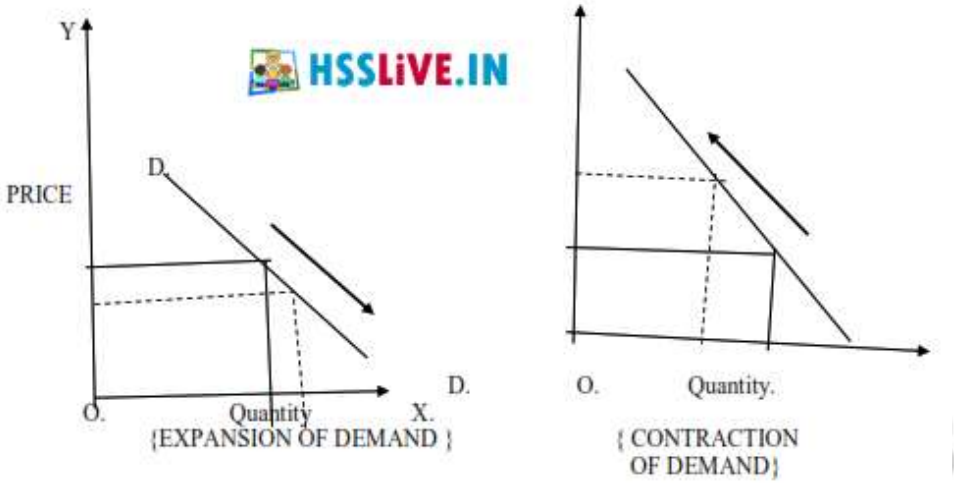


CHANGES IN DEMAND:

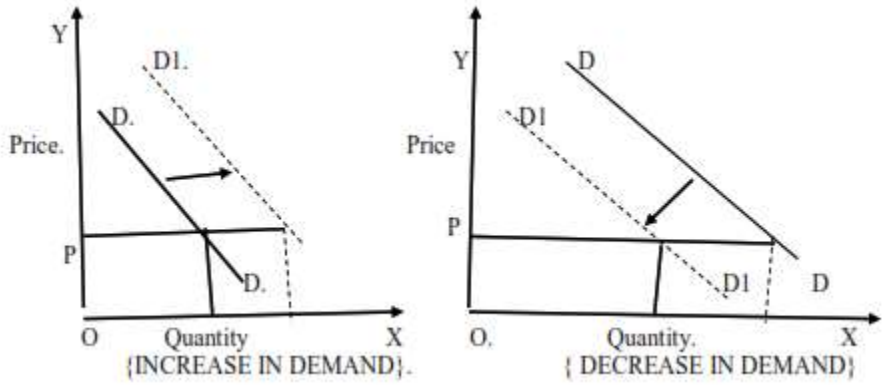
There are two types of changes that occur in demand. They are the following.

1. MOVEMENT ALONG A CURVE: Changed in demand due to the change in the price of the commodity is called movement along a curve. When the price of a commodity Decreases, it's quantity demanded increases, then the demand curve moves rightwards. It is called the expansion of Demand. In a similar way price of a commodity increase, the

demand curve moves leftward. It is called Contraction of Demand. This shown by the following diagram



2. SHIFT IN DEMAND: The change in demand due to factors other than price is called the shift in demand. The shift of Demand Curve to the rightwards due to changes in non-price factors is called an increase in demand. The leftward shift of Demand Curve due to changes in non-price factors is called a Decrease in demand. This is shown in the following diagram.

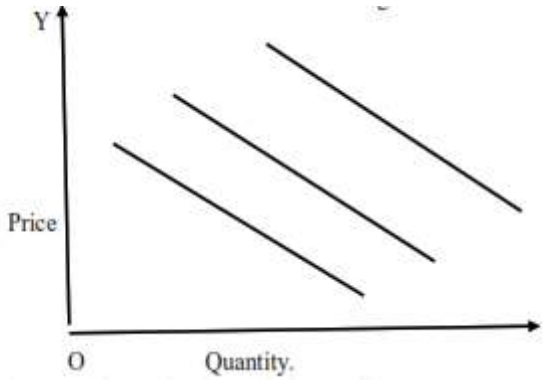


MARKET DEMAND:

The total Demand in the market at a particular price is called market demand. In other words, it is the horizontal summation of individual Demand. The following table and diagram show market demand

table and diagram show Market Demand.

Price	Demand (1) QD=10-P	Demand (2) QD= 20-2P	Market demand MD= 30-3P
1	9	18	27
2	8	16	24
3	7	14	21
4	6	12	18



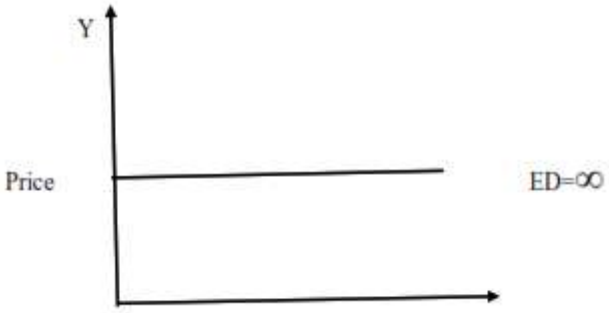
ELASTICITY OF DEMAND:

The degree of responsiveness of quantity demanded according to the change in price is called elasticity of demand. According to the responsiveness price elasticity of demand is classified into five. They are the following

PERFECTLY ELASTIC DEMAND:

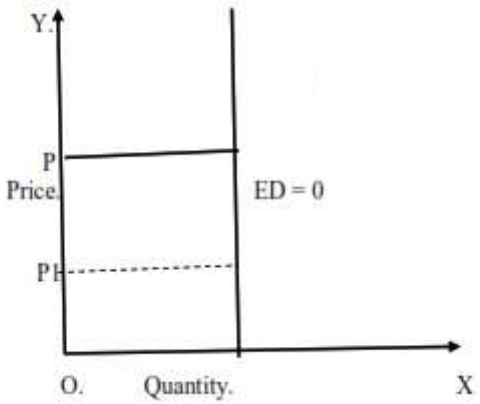
A small change in price causes an infinite change in price is called perfectly elastic demand.

Perfectly elastic Demand Curve is a horizontal straight line



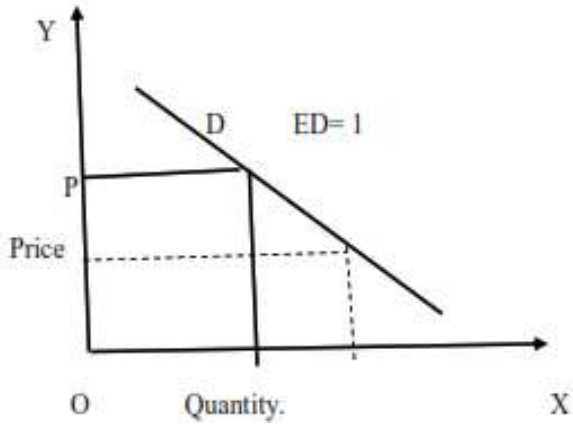
PERFECTLY INELASTIC DEMAND:

Any change in price doesn't cause any change in quantity demand is called perfectly inelastic demand. It is a vertical straight line parallel to the OY axis. This is shown by the following diagram



UNITARY ELASTIC DEMAND:

A change in price is caused by a proportionate change in quantity is called unitary elastic Demand. It is a rectangular hyperbola.



2. RELATIVELY ELASTIC OR MORE ELASTIC OR ELASTICDEMAND:

A change in price causes more than proportionate change in quantity demanded is called more elastic Demand. More elastic Demand Curve is shown in the following diagram.

2. RELATIVELY IN ELASTIC OR LESS ELASTIC OR INELASTICDEMAND:

A change in price causes less than proportionate change in quantity demanded is called less elastic Demand. Its demand curve is shown as follows.

METHODS FOR MEASURING PRICE ELASTICITY OF DEMAND:

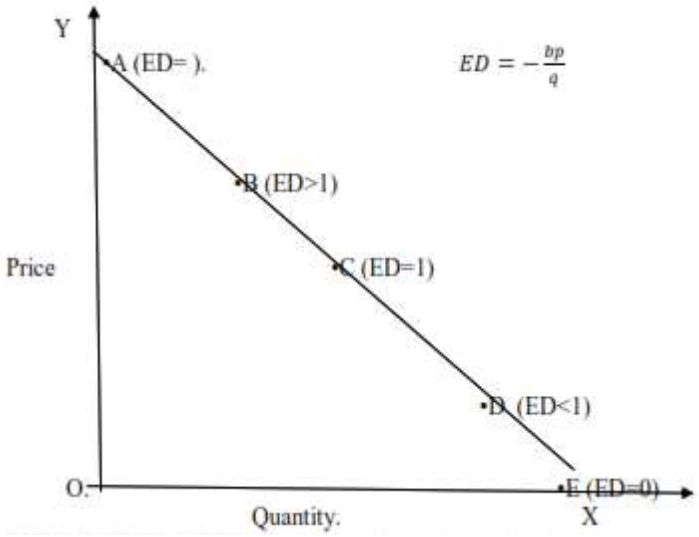
Price elasticity of Demand can be measured in three different ways

1. Percentage method: under this method elasticity is measured by dividing the percentage change in quantity demand by the percentage change in price. The following formula is used to find the price elasticity of demand.

$$ED = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}} \quad \text{OR} \quad ED = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

2. Geometric method: Under this method, we use the following formula is used to find

$$ED = \frac{\text{lower segment}}{\text{Upper segment}}$$



$$ED = -\frac{bp}{q}$$

3. EXPENDITURE METHOD:

Under this method price elasticity is measured in terms of total expenditure.

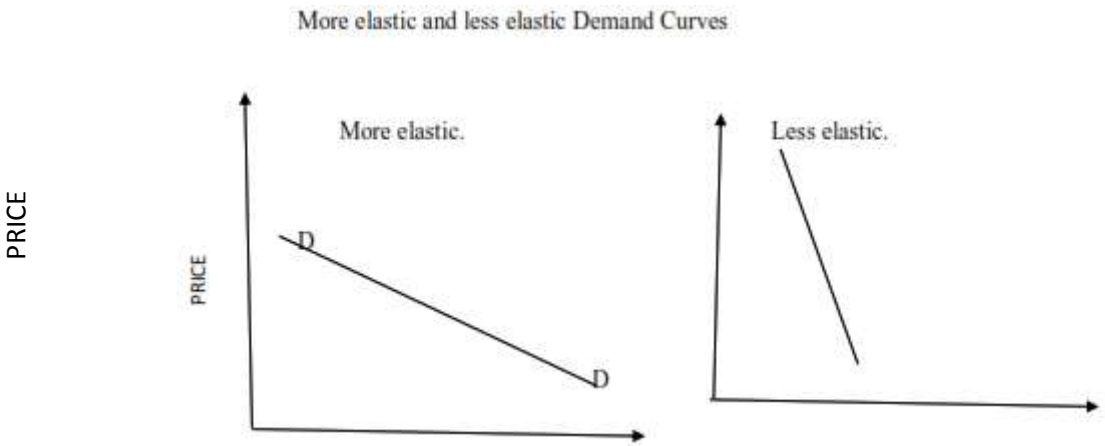
Using this method, we can calculate three types of elasticity.

i. When price and total expenditure moves in the opposite direction, there will be more elastic.

ii. When price and total expenditure moves in the same direction, there will be less elastic

iii. Any changes in price don't affect total expenditure, there will be unitary

elastic



SUBSTITUTE GOODS OR SUPPLEMENTARY GOODS:

The goods which are used as a substitute to satisfy a need are called substitute goods. eg coffee and tea, bus, and train.

COMPLEMENTARY GOODS:

The goods which are used together are called complementary goods. E.g. bread and jam, pen and ink.

NORMAL GOODS:

when Income of the consumer increases, quantity Demand of certain commodities also increases. Such goods are called normal goods.

E.g. Television, computer.

INFERIOR GOODS: When consumers Income Increase Demand for certain commodities Decreases. Such commodities are called inferior goods. E.g. beedi, tapioca FACTORS

DETERMINING PRICE ELASTICITY OF DEMAND:

The following are factors affecting price elasticity of demand

I. Nature of the product: The price elasticity of luxury goods is high elastic and elasticity of necessary goods are low elastic.
II. Availability of close substitutes: Substitute goods have high elastic Demand

and non-Substitute goods have inelastic demand

III. The proportion of income spent on goods: Consumers usually spend only a small portion of income on goods like salt, matchboxes, etc. Elasticity of such goods has low elasticity.

IV. The income of the consumer

V. Price of the goods

VI. Period