

Chapter 2 Unit 1- Demand Analysis

1. **Demand = Willingness (Desire) and ability (Resources/Mean) + willingness to use those means**
2. Demand is determined at certain, (i) **Price** (ii) **place** or (iii) **time**.
3. The quantity demanded is a **flow**.
4. **Types of Demand**
 - a. **Individual Demand**- sub-system of total demand.
 - b. **Market Demand**. sum total demand of all individual demand
 - c. **Price Demand** -Demand of consumer at various prices
 - d. **Income demand**- DD at various income levels. According to these superior goods have greater demand and as the level of income lowers, inferior goods have higher demand.
 - e. **Cross demand**- Demand due to availability of **Substitute goods** or **complementary goods**.
 - f. **Short run demand**- refers to the demand with its **immediate reaction**
 - g. **Long run demand**- refers to demand which exists over a long period.
 - h. **Industry demand**- total demand for the products of a particular industry.
 - i. **Company demand** denotes the demand for the products of a particular firm.
 - j. **Derived demand**-The demand because of the **demand for some other commodity called 'parent product'**,
 - k. **Autonomous demand**- **Independent of the demand for other goods**.
 - l. **Producer goods** are used for the production of other goods - either consumer goods or producer goods themselves.
 - m. **Consumer goods** are used for final consumption.
 - **Durable goods** are those which can be consumed more than once.
 - **Non-durable goods** are those which cannot be consumer more than once
5. **Factors of Demand**
 - a. **Price of the commodity**: demand for a commodity is **inversely related** to its price.
 - b. **Complementary goods** Inversely Related **Competing goods** or **substitutes**- **Directly Related**
 - c. **Income of the consumer**-
 - *As the level of income rises, increase in demand of necessities is proportionally less than increase in income.*
 - *As the income level increase importance of food and other non-durable*

goods in the overall consumption basket and a rise in the importance of durable goods

- There are some commodities for which the quantity demanded decreases with an increase in money income beyond this level. These goods are called **inferior goods**. [Also called as **Giffen goods**]

d. Tastes and preferences of consumers-

- Tastes and preferences of consumers are also influenced by '**Demonstration effect**' or '**bandwagon effect**', i.e., by seeing another person use a particular product/ commodity.
- Sometimes, when a product becomes common among all, some people decrease or altogether stop its consumption. This is called '**snob effect**'.
- Highly priced goods are consumed by status seeking rich people to satisfy their need for conspicuous consumption. This is called '**Veblen effect**'

e. Population aspect-

- **Size of the population**-Directly related
- **Composition of population**: Directly if composition is in favor of demand
- **The level of National Income and its Distribution**: Even Distribution More DD, uneven distribution less Demand
- **Consumer-credit facility and interest rates**: Cheaper interest rate and larger availability of credit increases DD

6. Law of Demand

(a) Other things being equal, **inverse relationship between price and quantity demanded**,

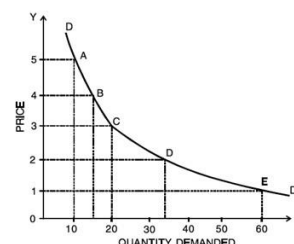
(b) The other things which are assumed to be equal or constant are:-

- Prices of related commodities (complementary goods or substitute goods) Income of consumers
- Tastes and preferences of consumers, and Such other factors which influence demand.

Schedule: -

1. Illustration:

Price	Quantity demanded
5	10
4	15
3	20
2	35
1	60



7. Features of the Demand Curve

- (a) Slopes downwards from left to right
- (b) Negatively sloped
- (c) May sometimes be a **straight-line** or sometimes a **free hand curve**
- (d) Demand curve is also called **Average Revenue curve (ARC)**.
- (e) The Market Demand curve is a **lateral summation** of individual Demand curve.

8. Rationale of the Law of Demand

- a) Law of diminishing marginal utility
- b) **Substitution effect**: -When the price of a commodity falls, it becomes **relatively cheaper** than other commodities.
- c) **Income effect**: As a result of fall in the price of the commodity, consumer's **real income or purchasing power** increases.
- d) **Arrival of new consumer**: Rise in number and rise in buying capacity
- e) **Different uses**:

9. Exceptions to the Law of Demand

- a) **Conspicuous goods**: **Prestige value** or **snob appeal** or **conspicuous consumption** or **Veblen effect** or **prestige goods effect**.
- b) **Giffen goods**: **Inferior goods**, with **no close substitutes** easily available and which occupy a **substantial place** in consumer's budget are called '**Giffen goods**'
- c) **Conspicuous necessities**: The demand for certain goods is affected by the **demonstration effect** of the consumption pattern of a social group to which an individual belongs.
- d) **Future expectations about prices**:
- e) **Irrational consumer**-
- f) **Demand for necessities**
- g) **Ignorant consumer**:
- h) **Speculative goods**

10. Expansion and contraction in Demand VS Increase and decrease in Demand

Term	Meaning	Effect
Expansion/ Extension of Demand	Quantity demanded Increases , due to decrease in price	Downward movement along same Demand curve
Contraction of Demand	Quantity demanded decreases , due to increase in price	Upward movement along same Demand curve
Increase in DD	Quantity demanded Increases , due to change in any factor other than price	Rightward Shift of Demand Curve
Decrease in DD	Quantity demanded decreases , due to change in any factor other than price	Leftward Shift of Demand Curve

Unit 2 Elasticity of Demand

- Elasticity of demand is defined as the **responsiveness of the quantity demanded of a good to changes in one of the variables on which demand depends.**
- the **percentage change in quantity demanded divided by the percentage change in one of the variables on which demand depends**

11. Factors affecting demand and name of their elasticity

Factors	Name of Elasticity	Denoted by
Price of the commodity	Price Elasticity	E_P
Income of the consumer	Income Elasticity	E_I
Price of the related product	Cross Elasticity	E_C
Advertisement	Advertisement Elasticity	E_A

12. Methods of calculation of Price Elasticity of Demand

Methods	Formula	Used when	Diagram
Percentage change or proportional Method	$E_p = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in Price}}$		
Point Elasticity - Method of Graph	$EP = \frac{\text{Lower segment}}{\text{Upper segment}}$	1. Applicable only for Straight-line Demand curve touching both the axes.	
Arc Elasticity Method	$1. \quad EP = \frac{q_1 - q_2}{q_1 + q_2} \times \frac{p_1 + p_2}{p_1 - p_2}$	1. Arc Elasticity is a measure of average responsiveness 2. Large change in prices and quantities	

Total Outlay Method	<ol style="list-style-type: none"> Elasticity is calculated by analysing the change in Total expenditure or Outlay of the household. By this method we can only say whether the demand for a good is elastic or inelastic; we cannot find out the exact coefficient of price elasticity 	
$E_p < 1$	<ul style="list-style-type: none"> Price and Expenditure moves in same direction. Demand is said to be less elastic, or inelastic 	<ul style="list-style-type: none"> Price Increase and TR increase Price Decrease and TR decrease
$E_p = 1$	<ul style="list-style-type: none"> Total Expenditure remains Unchanged. Demand is said to be unit elastic 	<ul style="list-style-type: none"> Price Increase TR unchanged Price Decrease TR unchanged
$E_p > 1$	<ul style="list-style-type: none"> Price and Expenditure moves in opposite direction. Demand is said to be elastic 	<ul style="list-style-type: none"> Price Increase TR decrease Price Decrease TR increase

13. Interpretation of Elasticity of Demand

Description	Numerical value	Interpretation	Nature of Curve	
Perfectly inelastic	$E_p = 0$	Qty. demanded does not change as price changes	Vertical line Parallel to Y axis	
Inelastic or less elastic	$0 < E_p < 1$	Qty demanded changes by smaller percentage than price	Relatively steeper Demand curve	

Unit Elastic	$EP = 1$	Qty demanded changes exactly by same % as price	45 degree straight line Or rectangular hyperbola	
Elastic	$1 < EP < \infty$	Quantity demanded changes by larger percentage than price	Relatively flatter demand curve	
Perfectly elastic	$EP = \infty$	Small change in price will bring infinite change in quantity demanded	Parallel to X axis	

14. Income Elasticity of Demand

Responsiveness of quantity demanded of a good to changes in the income of consumers	$E_i = \frac{\text{Percentage change in quantity Demand}}{\text{Percentage change in income}}$
---	--

15. Income Elasticity of Demand

Type	Relation between income & demand	Example	Formula	Curve
Positive Income Elasticity	Positive	Normal and Luxury goods	$E_y = 1$ $E_y > 1$ $E_y < 1$	
Negative Income Elasticity	Inverse	Inferior goods	$E_y < 0$	

Zero Income Elasticity	Constant (No change in demand though there is change in income)	Necessaries goods	$E = 0$	
-------------------------------	--	-------------------	---------	--

16. Cross Elasticity of Demand

Cross elasticity of demand is degree of responsiveness of demand for one good to a change in price of other good.

Positive Cross Elasticity	Direct or Positive relation (Goods must be substitute)	Tea & Coffee,	$CED = 1$ $CED > 1$ $CED < 1$	
Negative Cross Elasticity	Inverse relation (Goods must be complementary goods)	Car & Petrol	$CED < 0$	
Zero Cross Elasticity	Constant (No change in demand of one product though there is change in price of other product) goods must be unrelated	Cloth & salt	$CED = 0$	

17. For Quick Revision

Factors	Explanation	Elasticity
Nature of the commodity	Necessities.	Inelastic
	Luxurious goods.	Elastic
Level of income	Goods demanded by high income group.	Inelastic
	Goods demanded by low-income group.	Elastic
Proportion of expenditure	Commodity on which Proportion of expenditure is low.	Inelastic
	Commodity on which Proportion of expenditure is large.	Elastic
Level of price and change in price	When price level of a commodity is too high and change in price is smaller.	Inelastic

	If price level is low and change in price is large.	Elastic
Number of uses	Commodity which has limited uses.	Inelastic
	Commodity which used to satisfy several wants.	Elastic
Substitutes	Commodity which have less substitutes.	Inelastic
	Commodity having several substitutes.	Elastic
Urgency	Commodity which is required urgently.	Inelastic
	Commodity which is not required urgently.	Elastic
The Period	Demand for commodity is inelastic in long run.	Inelastic
	Demand for commodity is elastic in short period.	Elastic
Tied demand or Joint demand	Demand for those goods, which are tied to others.	Inelastic
Consumer habits	Demand for commodity used by habitual consumer.	Inelastic

Unit 3 - Methods of demand Forecasting

1. **Survey of Buyers' Intentions: direct interview of potential customers.**
 - a. **Complete enumeration method**
 - b. **Sample survey method**
 - c. **End-use method**, especially used in forecasting demand for inputs, involves identification of all final users,
2. **Collective opinion method:**
 - a) **Sales force opinion method** or **grass roots approach**. Firms having a wide network of **salespersonnel** can use the knowledge, experience and skills of the sales force.
 - b) Although this method is simple and based on first-hand information of those who are directly connected with sales, it is **subjective as personal opinions**.
3. **Expert Opinion method:**
Delphi Technique
 - a) The **Delphi technique**, developed by **Olaf Helmer** at the **Rand Corporation of the USA**, provides a useful way to obtain informed judgments from diverse experts
4. **Statistical methods:**
 - a) Forecasts using statistical methods are considered as superior methods because they are more scientific, reliable and free from subjectivity.
 - b) **Trend Projection method**: This method, also known **classical method**, is considered as a 'naive' approach to demand forecasting.
 - i. **Graphical Method:**
 - ii. **Fitting trend equation: Least Square Method**: sum of the squared differences between the calculated and observed value is minimised.
5. **Regression analysis**: Relationship is established between the quantity demanded (dependent variable) and the independent variables (explanatory variables) such as income, price of the good, prices of related goods etc. Once the relationship is established, we derive regression equation assuming the relationship to be linear. The equation will be of the form $Y = a + bX$.
6. **Controlled Experiments**: also known as **market experiment method**.
 - a) Under this method, future demand is estimated by conducting market studies and experiments on consumer behaviour under actual, though controlled, market conditions.
7. **Barometric method of forecasting**:
 - a) Just as meteorologists use the barometer to forecast weather, the economists use economic indicators to forecast trends in business

activities. This information is then used to forecast demand prospects of a product, though not the actual quantity demanded.

b) For this purpose, an **index of relevant economic indicators** is constructed.

Movements in these indicators are used as basis for forecasting the likely economic environment in the near future. There are leading indicators, coincidental indicators and lagging indicators. **The leading indicators move up or down ahead of some other series.**

Unit 4- Supply

1. Supply refers to amount of a commodity seller is
 - **Able to sell** - depends upon stock of a commodity
 - **And willing to sell**- depends upon price of a commodity.

2. Determinants of supply on Factors affecting supply

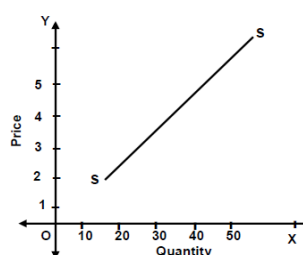
Factors
Price
Stock
Time
Natural Resources
Weather conditions
Cost of Production
Techniques of Production
Taxation policy
Trade policy
Infrastructure

3. Law of supply states that –other things being equal there is a direct relationship between price and supply.

4. The law of supply is explained by Dr. Alfred Marshall.

5. Supply Schedule and Graph

Price	Supply
1	10
2	20
3	30
4	40
5	50



6. Features of Supply curve

- a) Slopes upwards from left to the right.
- b) Positively slope
- c) Straight—line or sometimes a free hand curve.
- d) The Market Supply Curve is a lateral summation (totaling) of Individual Supply Curves

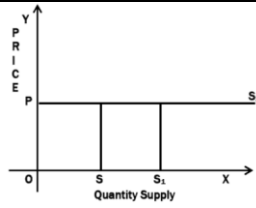
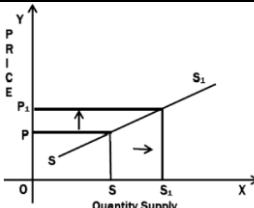
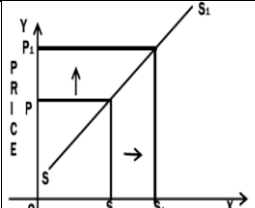
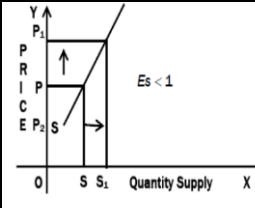
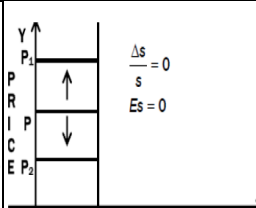
7. Assumptions of Law of supply

- No change in cost of production
- No change in technology
- Normal weather conditions
- No change in infrastructural facilities
- No change in amount of Natural Resources
- No change in Taxation policy
- No change in monetary and trade policy

8. Increase and Decrease VS Expansion and contraction in the Quantity Supplied

Increase In SS	Decrease In SS	Expansion in SS	Contraction in SS
Increase in Supply take place as a result of changes in factors other than price , while price remains constant.	Decrease in Supply take place as a result of changes in factors other than price , while price remains constant.	Rise in the <u>quantity supplied</u> takes place as a result of changes in price	Fall in <u>the quantity supplied</u> takes place as a result of changes in price
Shift	Shift	Upward Movement along same SS curve	Downward Movement along same SS curve

9. **Elasticity of Supply** refers to degree of **responsiveness of supply to change in its price**. Or, Elasticity of Supply refers to the *ratio between percentage or proportionate change in supply and percentage or proportionate change in price*.

Perfectly Elastic Supply	Relatively Elastic Supply Or, More Elastic	Unitary Elastic Supply	Relatively Inelastic Supply Or, less Elastic	Perfectly Inelastic Supply
$E_s = \infty$	$E_s > 1$	$E_s = 1$	$E_s < 1$	$E_s = 0$
				

10. Methods of measurement of Elasticity of supply

Methods of measurement of Elasticity of supply

Percentage / Proportionate Method: According to this method elasticity of supply is calculated by dividing a % or proportionate change in supply with the % or proportionate change in price. As explained above

$$\frac{\% \text{ Change in supply}}{\% \text{ Change in Price}}$$

Arc Elasticity: when the price change is somewhat larger and we have to measure elasticity over an arc rather than at a specific point on it, in such cases, the concept of arc elasticity is used. In arc elasticity we use the average of the two prices and quantities (Original & new)

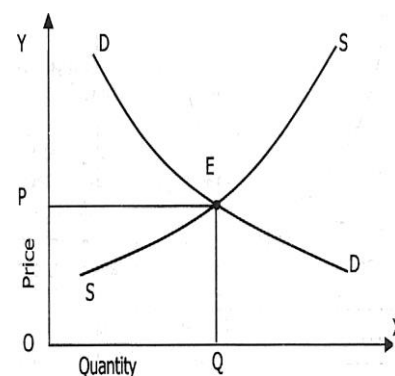
$$ES = \frac{Q_1 - Q_2}{Q_1 + Q_2} \times \frac{P_1 + P_2}{P_1 - P_2}$$

Where P1 and Q1 are original price and quantity respectively and P2 and Q2 are new price and quantity respectively.

11. Equilibrium Price:

The determination of Equilibrium Price using Demand and Supply is explained in the following manner -

- Demand Curve slopes downwards from left to right, while Supply Curve slopes upwards from left to right.
- Point E constitutes the **Stable Equilibrium** for the product, other things remaining equal.
- The Equilibrium Price is OP, and the quantity bought and sold at that level is OQ units.



Unit 5- Consumer Behaviour and Utility Analysis

1. Utility is **want satisfying power** of a commodity is called as utility.
2. Utility is **subjective** term and differs from person to person
3. **Utility does not mean usefulness.**
4. Utility is **ethically neutral**.
5. Human beings have virtually unlimited wants, Each single want is **satiabile** (capable of being satisfied)
6. **Consumer spends his income** on different G&S to attain **maximum satisfaction**.
7. **Difference Between Cardinal and Ordinal Approach**

	Cardinal Approach	Ordinal Approach
Assumptions	Measurable and quantifiable	Utility is not quantifiable
Rationale	Human satisfaction can be expressed in monetary terms ,	Human Satisfaction is psychological phenomenon
Economists	Alfred Marshall	Hicks and Allen

ORDINAL APPROACH

Refer Table for further discussion:(Table 2.1)

Quantity of Oranges consumed per day	Total utility	Marginal Utility	Price	Consumer's Surplus in Rs.
0	0	0	0	0
1	60	60	40	20
2	110	50	40	10
3	150	40	40	0
4	180	30	40	-10
5	200	20	40	-20
6	210	10	40	-30
7	210	0	40	-40
8	200	-10	40	-50
9	180	-20	40	-60

8. **Total Utility**- The **sum total** of utility derived from different units of commodity
9. **Marginal Utility**- Additional utility derived from additional unit of a commodity.

Marginal Utility can also be defined as **change in the total utility resulting from one-unit change ($TU_n - TU_{(n-1)}$) in consumption of commodity, per unit of time or, Change in Utility/ change in Qty.**

10. Assumptions under Marginal utility analysis and cardinal approach

- a) **Cardinal Measurability of Utility-** Utility is measurable and quantifiable.
- b) **Comparability of Utility across the goods-** Satisfaction derived by a person from different commodities can be compared.
- c) **Independence of Utilities-**
- d) **Constant Marginal Utility of Money-**

11. **Law of diminishing Marginal utility** states -as a consumer consumes more of stock, the extra satisfaction that he derives from an extra unit, declines with the increase in consumption of that item.

12. If same goods have capacity to satisfy other wants then their marginal utility would not have decreased.

13. Conclusion as per law of Diminishing marginal utility

- a) Total Utility increases at **diminishing rate**.
- b) Marginal Utility is **Downward Sloping curve**, moving from **left to right**
- c) Marginal utility is **negatively sloped curve**.
- d) **Where Marginal Utility is negative, Total utility decreases**.
- e) MU goes on decreasing & becomes negative beyond a certain point of time.

14. Assumptions and Exception to Law of Marginal utility

- a) Standard Units- Suitable size.
- b) Homogeneous units-
- c) Constant Income-
- d) Constant Taste/ fashion- Continuous consumption-
- e) Cardinal approach- Utility is quantifiable

15. **Maximum Satisfaction-** The consumer will attain maximum satisfaction, and will be in equilibrium when MU of money spent on various goods that he buys, are equal.

16. **Consumer's Equilibrium:** Consumer is in equilibrium when price of the commodity = MU. Similarly, for more than two products, consumer will be in equilibrium if-

$$\frac{MU_x}{Price_x} = \frac{MU_y}{Price_y} = \frac{MU_z}{Price_z}$$

17. The consumer will attain maximum satisfaction, and will be in equilibrium when MU of money spent on various goods that he buys, are equal.

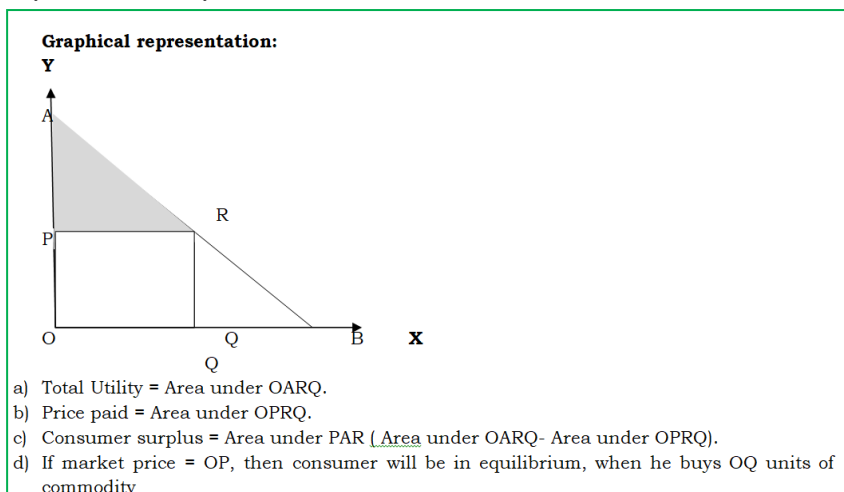
18. Consumer Surplus: What a consumer is ready to pay – what he actually pays.

- The consumer continues to buy a commodity till $MU = \text{Price of the commodity}$
- For all the earlier units purchased, $MU > \text{price paid}$. This difference is called as consumer's surplus

19. Limitations to Consumer surplus

- Relevant only if cardinal approach to measurement of utility is assumed.
- Consumer's surplus cannot be measured precisely
- Consumer's surplus derived is affected by availability of substitutes.
- In case of necessities, consumer's surplus is infinite
- Not applicable to prestigious items
- It is assumed that MU of the money is constant, which is unrealistic.

20. Graphical Interpretation



21. Indifference curve analysis- Assumptions

- Ordinal Approach to utility-** UTILITY is not measurable in monetary terms.
- Consistency in ranking-** If a consumer prefers X to Y and Y to Z, this automatically means that he must prefer X to Z.
- Rational Consumer-Ranking and preferences-**
- Number of Goods-** Customer prefers that combination which has more commodity in combination and tries to maximize his satisfaction.

22. Indifference curve analysis

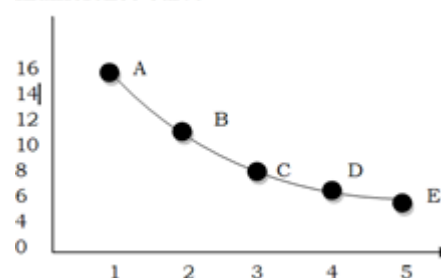
- An Indifference curve is a curve which represents all those combinations of goods which gives **same satisfaction** to the consumer.

b) He remains indifferent among those combinations.

Example:

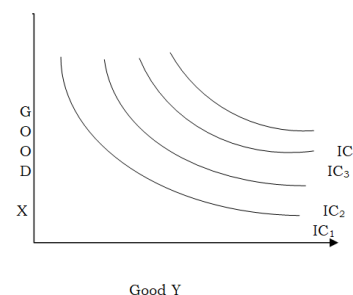
Combination	Icecream	Chocolates	Marginal Rate of substitution (MRS)
A	15	1	-
B	11	2	4
C	8	3	3
D	6	4	2
E	5	5	1

Indifference curve



23. Indifference Map:

- A set of indifference curves is called as **Indifference Map**.
- An indifference map depicts complete picture of **customer's taste and preferences**.
- The consumer is indifferent for any combination lying on same IC.
- However he prefers **combination on Higher IC to combinations on lower IC**, as the combinations of higher IC give more satisfaction. So $IC_4 > IC_3 > IC_2 > IC_1$.
- Farther the IC from the origin, higher is the satisfaction level.**



24. Marginal rate of Substitutions

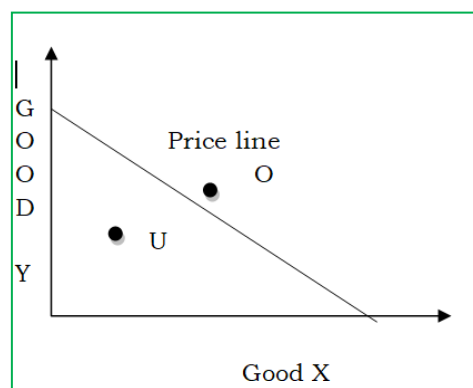
- Marginal rate of substitutions (**MRS**) indicates how much of one commodity is substituted for how much of another commodity.
- MRS is indicated by **Slope of IC curve** at a particular point.
- MRS show **decreasing trend** similar to concept of diminishing marginal utility.

25. Property of indifference curve

- Downward sloping to right- negatively sloped.**
- Convex to the origin-** due to **diminishing nature of MRS**.
- All point on an **IC gives same satisfaction-**
- Higher IC gives Higher level of satisfaction-
- Non-Intersecting**

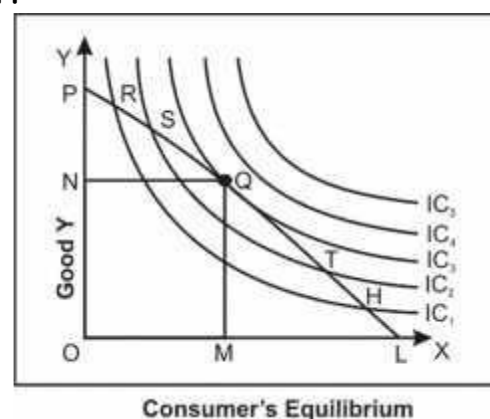
26. Budget line - Price line, Price opportunity line, Price- income line, Budget constraint line.

- A Budget line shows all those combinations of two goods which a consumer **can buy** spending **his given money income** on **two goods** at their given prices.
- Budget line is also called as Every point on Budget line represents **full spending** by the consumer.



27. Consumer Equilibrium under indifference curve approach

- Consumer will try to reach the **highest possible IC**.
- However his objective of buying higher quantity of goods is **restricted by Budget line**.
- Thus a consumer is in **equilibrium when he derives maximum possible satisfaction** from the goods, and is in **no position to re-arrange his purchase** of goods.



28. Assumptions under Ordinal Approach:

- The consumer has fixed money income which he has to spend wholly on **2 Goods**
- Prices are constant.
- The consumer has given an indifference map which shows his scale of preferences

29. Relationship of MRS and price at equilibrium,

- At equilibrium, slope of price line is equal to slope of Indifference curve.
- Slope of the line is P_x/P_y .
- Slope of indifference curve indicates Marginal rate of substitution of X for Y.

$$MRS_{xy} = MU_x / MU_y$$

- Hence at equilibrium $MRS_{xy} = MU_x / MU_y = P_x / P_y$, alternatively, $MU_x / P_x = MU_y / P_y$