UNIT 2

CONSUMER'S BEHAVIOUR & THEORY OF DEMAND

POINTS TO REMEMBER

- **Consumer :** is an economic agent who consumes final goods and services.
- **Total utility :** It is the sum of satisfaction from consumption of all the units of a commodity at a given time.
- **Marginal Utility :** It is a net increase in total utility by consuming an additional unit of a commodity.
- **Law of Diminishing Marginal Utility :** As consumer consumes more and more units of commodity. The Marginal utility derived from the last each successive units goes on declining.
- **Consumer's Bundle :** It is a quantitative combination of two goods which can be purchased by a consumer from his given income.
- **Budget set :** It is a quantitative combination of those bundles which a consumer can purchase from his given income at prevailing market prices.
- **Consumer Budget :** It states the real income or purchasing power of the consumer from which he can purchase the certain quantitative bundles of two goods at given price.
- **Budget Line :** Shows those combinations of two goods which a consumer can buy from limited income on same curve.
- **Monotonic Preferences :** Consumer's preferences are called monotonic when between any two bundles, one bundle has more of one good and no less of other good.
- **Change in Budget Line :** There can be parallel shift (leftwards or rightwards) due to change in income of the consumer.

- **Marginal Rate of Substitution (MRS) :** It is the rate at which a consumer is willing to substitute good X for good y.

$$\text{MRS} = \frac{\text{Good } x}{\text{Good } y}$$

- **Indifference Curve :** is a curve showing different combination of two goods, each combinations offering the same level of satisfaction to the consumer.

- **Properties of Indifference curve :**

1. Indifference curves are negatively sloped.
2. Indifference curves are convex to the point of origin.
3. Indifference curves never touch or interesect each other.
4. Higher Indifference curve represents higher level of satisfaction.

- **Consumer's Equilibrium :** Consumer is in equilibrium when he gets maximum satisfaction from his limited income.

Condition of Consumer's Equilibrium

(a) In terms of utility :

(i) In case of one good $\rightarrow \frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_m$

where $MU_x \rightarrow$ Marginal utility of good X

$P_x \rightarrow$ Price of Good X

(ii) In case of two goods

(b) In terms of Indifference curve : There should be

(i) Decreasing MRS (Marginal Rate of substitution).

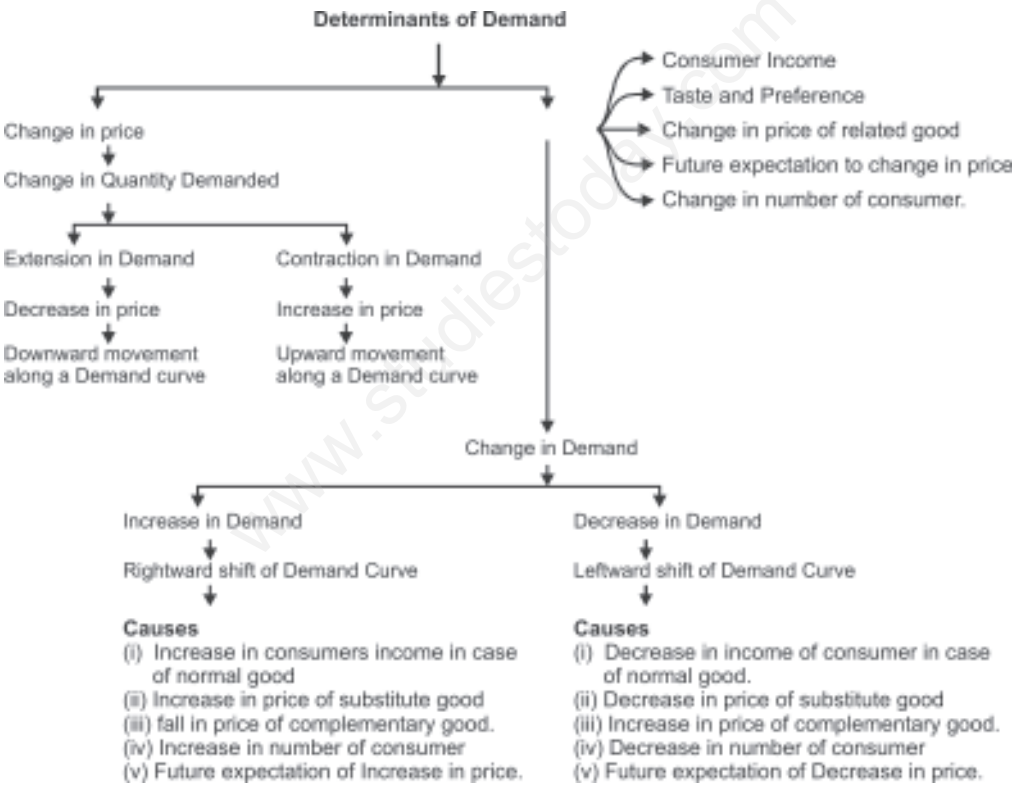
(ii) $MRS_{xy} = \frac{P_x}{P_y}$

$P_x \rightarrow$ Price of good *x*

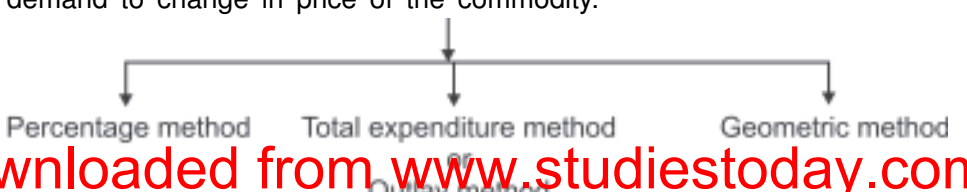
$P_y \rightarrow$ Price of good *y*

(iii) Budget line should be tangent to indifference curve.

- **Demand :** It is that quantity which a consumer purchases or is willing to buy at given price.
- **Market Demand :** It is the sum of total quantity purchased by all the consumers at given price in the market.
- **Demand Function :** It is the functional relationship between the demand of a good and factors affecting demand.
- **Change in Demand :** When demand changes due to change in any one of its determinants other than the price.
- **Change in Quantity Demanded :** When demand changes due to change in its own price.



- **Price Elasticity of Demand :** It measure the degree of responsiveness of demand to change in price of the commodity.



Percentage Method

$E_d \rightarrow$ Elasticity of Demand

$\Delta Q \rightarrow$ Change in quantity

$\Delta P \rightarrow$ Change in Price

$P \rightarrow$ Initial Price

$Q \rightarrow$ Initial Quantity

$$E_d = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} \text{ or } Ed = (-)\frac{Q_1 - Q_0}{P_1 - P_0} \times \frac{P_0}{Q_0}$$

Or

$$E_d = \frac{\text{Percentage Change in Quantity}}{\text{Percentage Change in Price}}$$

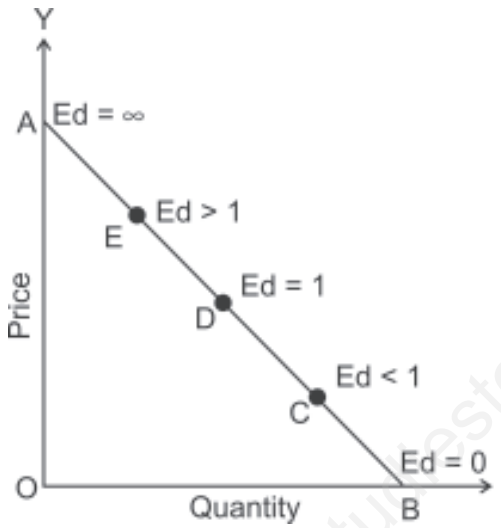
- **Total Expenditure Method :** It measures price elasticity of demand on the basis of change in total expenditure incurred on the commodity by a household as a result of change in its price.
- There are three conditions :
  1. If the Total Expenditure on the commodity changes inversely with the price change, the demand is relatively elastic (ed > 1)
  2. If the total expenditure on the commodity remains the same as before and after change in price, then demand is said to be unitary elastic (ed = 1)
  3. It the total expenditure on the commodity increases with an increase in its price and decreases with a decrease in the price, then demand is relatively inelastic (ed < 1)
- **Geometric Method :** Elasticity of demand at any point is measured by dividing the length of lower segment of the demand curve with the length of upper segment of demand curve at that point.

$$Ed = \frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$$

Diagram to show Geometric or point method :

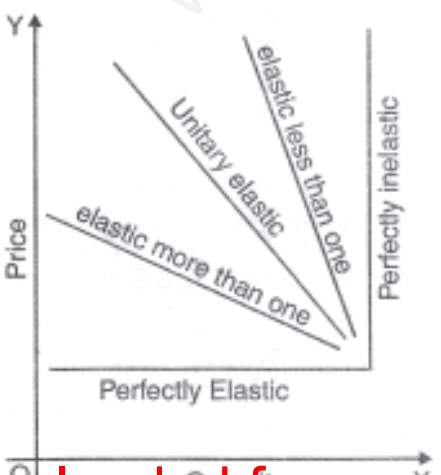
Elasticity of demand at given point

D is mid point of the demand curve



$$\frac{\text{Lower part of the demand curve}}{\text{Upper part of the demand curve}}$$

Degree of Price Elasticity of Demand



- **Factors affecting Price elasticity of Demand**
  - (a) Behaviour of the consumer
  - (b) Nature of the commodity
  - (c) Possibility of postponement of consumption.
  - (d) Proportion of income to be spent on the commodity
  - (e) Number of close substitutes
  - (f) Alternative uses of commodity
  - (g) Income of the consumer

VERY SHORT ANSWER TYPE QUESTIONS (1 MARK)

1. What is meant by utility?
2. How is Total utility derived from marginal utilities?
3. What is Law of Diminishing Marginal Utility?
4. What will be the behaviour of total utility when marginal utility is zero?
5. State condition of consumer's equilibrium in respect of one good.
6. Define consumers equilibrium.
7. What is meant by Marginal Rate of Substitution (MRS).
8. What is meant by budget set.
9. Define Indifference curve Map.
10. How is budget line defined?
11. Why does higher indifference curve give more satisfaction?
12. What is the impact of diminishing marginal rate of substitution on the slope of indifference curve?
13. Define monotonic preference.
14. How is market demand schedule derived with the help of individual demand schedules?
15. Define normal good.
16. How does availability of substitute good affect the elasticity of demand?
17. Demand of good 'X' falls due to increase in the income of the consumer what type of good 'X' is?
18. What will be the impact on demand of the good due to increase in price of

the substitute good?

19. A rise in price of a good results in a decrease in expenditure of it. Is its demand elastic or inelastic?
20. What is meant by market demand?
21. Define demand schedule.
22. What cause an upward movement along a demand curve?
23. If the number of consumers increase, in which direction will the demand curve shift?
24. A straight line demand curve is given. What will be elasticity of demand on the mid point of this curve.
25. If the slope of a demand curve is parallel to X-axis, what will be the elasticity of demand?
26. Why is demand of water inelastic?
27. Define price elasticity of demand.

H.O.T.S.

28. Why does total utility increases at diminishing rate due to continuous increase in consumption?
29. Due to decrease in price of pen why does the demand of ink increase?
30. What will be the behaviour of total utility when marginal utility curve lies below X-axis?
31. When is demand inelastic?
32. Give two examples of normal goods & inferior goods.

SHORT ANSWER TYPE QUESTIONS (3-4 MARKS)

1. Explain the law of diminishing marginal utility with the help of a utility schedule.
2. Explain consumers equilibrium with utility approach in case of single good.
3. What do you mean by budget line? What are the reasons of change in budget line?
4. Explain the relationship between total utility and marginal utility with the help of schedule.

Or

What changes will take place in total utility when –

(a) Marginal utility curve remains above X–axis

(b) Marginal utility curve touches X–axis

(c) Marginal utility curve lies below X–axis.

5. State three features of indifference curve.
6. Why does two indifference curves not intersect each other?
7. Under what situations there will be parallel shift in budget line?
8. Explain the effect of a rise in the prices of 'related goods' on the demand for a good X.
9. Why does demand of a normal good increases due to increase in consumer's income?
10. State elasticity of demand of followings :

(a) Luxurious goods

(b) Goods of alternate use

(c) Necessity goods.

11. Distinguish between expansion of demand and increase in demand with the help of diagram.
12. Measure Price Elasticity of Demand on the following points of a straight line demand curve :

(a) Centre point of the demand curve.

(b) Demand curve intercepting y-axis

(c) Demand curve intercepting x-axis.

13. Distinguish between change in demand and change in quantity demanded.
14. What will be the effect of following on elasticity of demand.

(a) time factor (b) nature of the product.

15. What will be the slope of demand curve under following situations.

(a) Perfectly elastic demand

(b) Perfectly inelastic demand

(c) Unit elastic demand.

16. State the factors of rightward shift of demand curve. Explain any one.

17. State the factors of leftward shift of demand curve. Explain any one.

18. How does 'a proportion of income spent on a good' affect elasticity of demand.

19. What will be elasticity of demand if

    (a) Total expenditure increases due to increase in price.

    (b) Total expenditure increases due to fall in price.

20. When price of a good is Rs. 7 per unit a consumer buys 12 units. When price falls to Rs. 6 per unit he spends Rs. 72 on the good. Calculate price elasticity of demand by using the percentage method. comment on the likely shape of demand curve based on this measure of elasticity.

21. A consumer buys 10 units of a good at a price of Rs. 9 per unit. At price of Rs. 10 per unit he buys 9 units. What is price elasticity of demand? Use expenditure approach Comment on the likely shape of demand curve on the basis of this measure of elasticity.

22. A consumer buys 20 units of a good at a price of Rs. 5 per unit. He in incurs an expenditure of Rs. 120 when he buys 24 units. Calculate price elasticity of demand of the percentage method. Comment on the likely shape of demand curve based on this information.

23. When the price of a commodity falls by Rs. 2 per unit, its quantity demanded increases by 10 units. Its price elasticity of demand is (–) 1. Calculate its quantity demanded at the price before change which was Rs. 10 per unit.

24. The price elasticity of demand of a commodity is –0.5. At a price of Rs. 20 per unit, total expenditure on it is Rs. 2,000. Its price is reduced by 10 percent. Calculate its demand at the reduced price.

H.O.T.S.

25. State four determinants of price elasticity of demand.

26. Fill in the gaps in the following equations :

    (i)

    (ii)

    (iii)

    (iv)

27. Differentiate between :

    (i) Normal goods and Inferior goods

    (ii) Complementary goods and substitute goods.

28. Why should the budget line be tangent to the indifference curve at the point of consumer's equilibrium.

29. Why does consumer stop consumption in case where marginal utility is less than price of a good?

30. What is budget line? Why is it negatively stoped?

31. A consumer consumes only two goods x & y. state & explain the conditions of consumer's equiiprium with the help of utility analysis.

32. Explain the conditions determining how many units of a good the consumer will buy at a given price.

33. Difine marginal rate of substitution. Explain why is an indifference curve convex?

LONG QUESTIONS (6 MARKS)

1. Explain the conditions of consumer's equilibrium with the help of the indifference curve analysis. Represent the same in a diagram.

2. Explain the determination of consumers equilibrium with the help of a schedule in case of two commodities by using utility approach.

3. Why does demand curve slope downward?

4. Explain the determinants of price elasticity of demand.

5. With the help of diagrams, explain the effect of following changes on the demand of a commodity.

    (a) A fall in the income of its buyer.

    (b) A rise in price of complementary good.

6. What are the conditions of consumer's equilibrium under the indifference curve approach? What changes will take place if the conditions are not fulfilled to reach equilibrium?

7. Explain the three properties of indifference curve.

H.O.T.S.

8. With the help of numerical example measure price elasticity of demand in the following conditions by total expenditure method :

   (i) Demand falls when price is constant.

   (ii) Price falls while demand is constant.

9. Whether the following statements are true or false? Give reasons.

   (i) Two indifference curves never intersects each other.

   (ii) Income effect of inferior good is positive.

   (iii) Change in quantity demanded is the explanations of law of demand.

10. Explain the concept of marginal rate of substitution (MRS) by giving an example. What happens to MRS when consumer moves downwards along the indifference curve? Give reasons for your answer.

11. Following statements are true or false give reasons :

   (i) Increase in number of consumers shifts the demand curve rightward.

   (ii) The demand of a commodity becomes elastic if its substitute good is available in the market.

   (iii) The price elasticity of demand is equal to unity at a point situated in the middle of a straight line demand curve.

ANSWERS

VERY SHORT ANSWER TYPE QUESTIONS

1. Utility is the power of goods to satisfy human wants.
2. Total utility is derived by summing up the marginal utilities TU = ΣMU.
3. Law of diminishing marginal utility states that as more and more units of a commodity are consumed marginal utility derived from every additional unit must decline.
4. Total utility will be maximum.
5. $MU_X = P_x$
6. Consumers equilibrium refers to a situations in which a consumer gets maximum satisfaction from his given income and market price.

7. MRS is the rate of sacrifice of one good to get an additional unit of other good.
8. The set of bundles available to the consumer with his given income at prevailing market price is called the budget set.
9. A family of indifference curve indicating different levels of satisfaction called indifference map.
10. Budget line is a line showing all different possible combinations of two goods which a consumer can buy with his given income and the price of both goods.
11. Higher difference curve shows a higher level of satisfactions. It shows the various combinations of excess quantity of both goods than lower indifference curve.
12. Indifference curve become convex towards the origin.
13. Consumer's preferences are called monotonic when between any two bundles, one bundle has more of one good and no less of other good.
14. By summations of individual schedules.
15. Normal goods are those goods, the demand for which increases as income of the buyer rise. There in positive relation between income and demand of these goods.
16. The demand of a good becomes elastic if its substitute good is available in the market.
17. Good 'X' is an inferior good.
18. The demand of the good will increase.
19. Elastic.
20. Market demand is the sum of total demand of all the consumers in the market at a particular time and at a given price.
21. Demand schedule is a tabular representation which represent different quantities of the commodity demanded at different prices.
22. Increase in price while other factors are constant.
23. Rightward.
24. Equal to unit.
25. Perfectly elastic.
26. Because water is a necessity good.

27. The price elasticity of demand is the degree of responsiveness of quantity demanded of a commodity to the change in its price.

H.O.T.S. (ANSWERS)

28. As more and more units of commodity are consumed, marginal utility derived from each successive unit tends to diminish so total utility increases at diminishing rate up.

29. These are complementary goods.

30. Total utility start to decline.

31. When percentage change in quantity demanded is less than percentage change in price, the demand is said to be inelastic.

32. Normal goods – Rice, Wheat

    Inferior goods – coarse grain, coarse cloth.