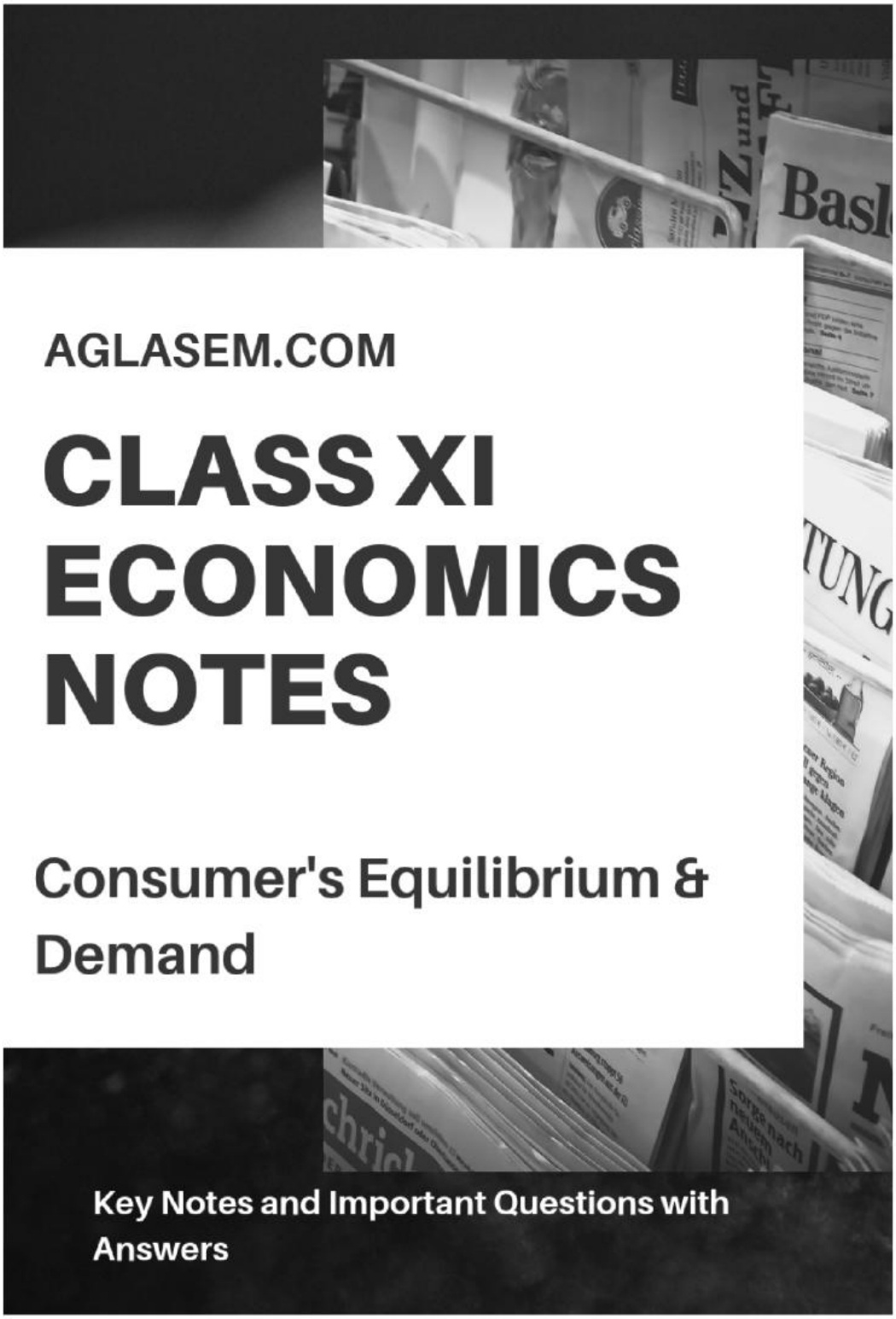


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CLASS XI ECONOMICS NOTES

Consumer's Equilibrium & Demand

Key Notes and Important Questions with Answers

UNIT II

CONSUMER'S EQUILIBRIUM & DEMAND

Points to Remember

- **Consumer :** is an economic agent who consumes final goods and services to fulfill his basic needs.
- **Utility :** Wants satisfing capacity of goods and services is called utility.
- **Total utility :** It is the sum of satisfaction/utility a consumer gets 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 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 at given prices.
- **Budget set :** It is quantitative combination of those bundles which a consumer can purchase from his given income at prevailing market prices.

  Budget Set : $P_x . X + P_y . Y \leq M$
- **Budget Line :** It is a line showing different combinations of two goods which a consumer can buy by spending his whole income at given price of the goods.

  Budget line : $M = P_x . x + P_y . y$
- **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.

- **Monotonic Preferences :** Consumer's preferences are called monotonic when between any two bundles, consumer always choose a bundle having more of one good and no less of other goods.
- **Change in Budget Line :** There can be parallel shift (leftwards or rightwards) due to change in income of the consumer and change in price of goods.
- **Marginal Rate of Substitution (MRS) :** It is the rate at which a consumer is willing to substitute good Y for good X.

$$MRS = \frac{\text{Loss of Good Y}}{\text{Gain of Good X}} \text{ or } -\frac{\Delta Y}{\Delta X}$$

- **Indifference Curve :** is a curve showing different combination of two goods, each combinations offering the same level of satisfaction to the consumer.
- **Indifference Map :** It refers to a set of indifference curves placed together in a diagram.
- **Characteristics of Indifference Curve**

1. **Indifference curves are negatively sloped :** because to increase quantity of one good some units of other has to be sacrificed to remain on same satisfaction level.
2. **Indifference curves are convex to the point of origin :** due to decreasing MRS. MRS decreases due to law of diminishing marginal utility.
3. **Indifference curves never touch or intersect each other :** each indifference curve shows different level of satistation. Intersection point shows same satisfaction level which is not possible.
4. **Higher Indifference curve represents higher level of satisfaction :** due to monotonic preference. Higher indifference curve shows bundles having more of one commodity and not less of other good incomparision of lower indifference curve.

- **Consumer's Equilibrium :** It is a situation where a consumer is

spending his income in such a way that he is getting maximum satisfaction and has no tendency to change.

- **Condition of Consumer's Equilibrium**

(a) **Cardinal approach (UtilityAnalysis) :** According to this approach utility can be measured. "Utils" is the unit of utility.

Conditions of Equilibrium :

(i) In case of one commodity

$$MUm = \frac{MUx}{Px}\left[\text{If } MUm = 1,\ MUx = Px\right]$$

Where, MUm = Marginal utility of money

MUx = Marginal utility of 'x', Px = Price of 'x'.

(ii) In case of two commodity : $\frac{MUx}{Px} = \frac{MUy}{Py} = MUm$

and MU must be decreasing.

(b) **Ordinal approach (Indifference Curve Analysis) :** According to this approach utility can't be measured but can be expressed in order or ranking.

Condition of Equilibrium :

(i) $MRSxy = \frac{Px}{Py}\left[\begin{matrix}Px = \text{Price of 'x'}\\ Py = \text{Price of 'y'}\end{matrix}\right]$

or budget line must be tangent to indifference curve.

(ii) MRS must be decreasing or

Indifference curve must be convex to the origin.

- **Quantity Demanded :** It is that quantity which a consumer is able and is willing to buy at given price and in a given period of time

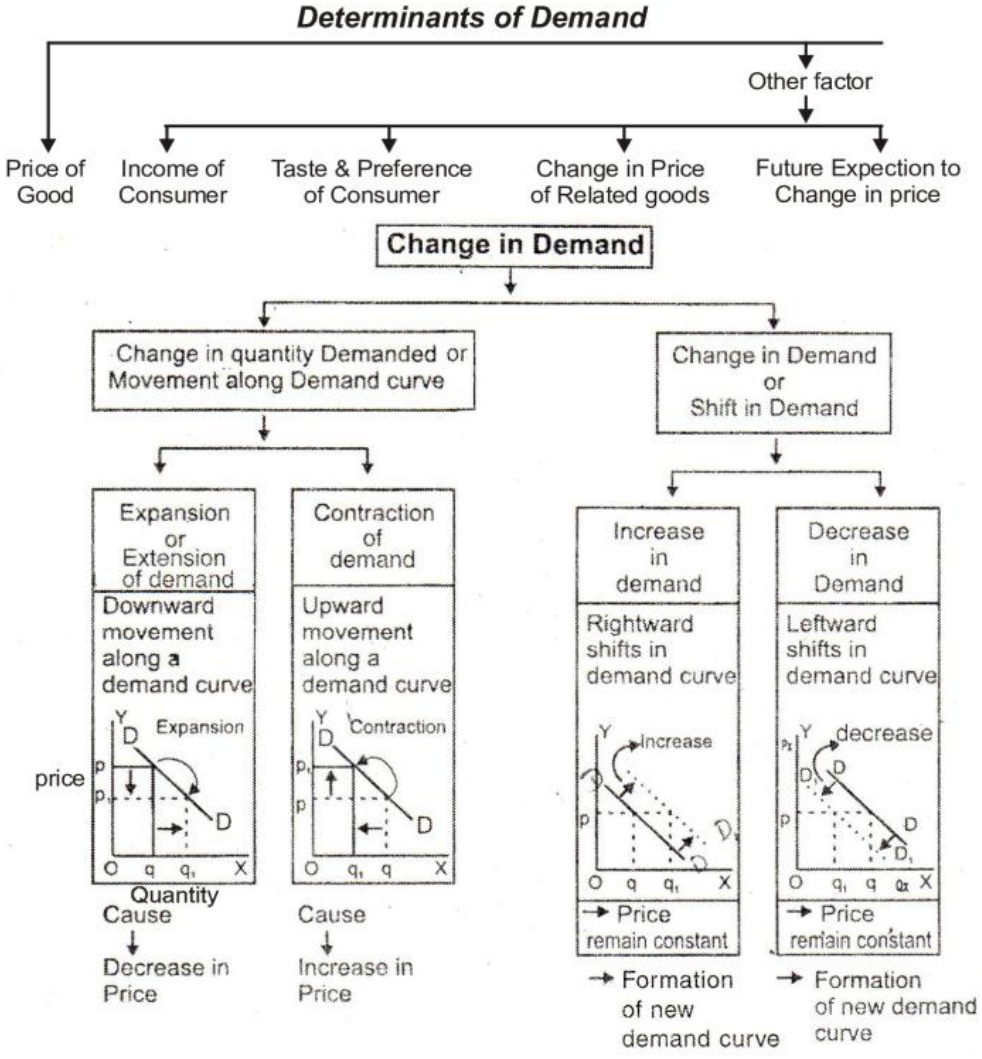
- **Market Demand :** It is the total quantity purchased by all the consumers in the market at given price and in a given period of time.

- **Demand Function :** It shows the functional relationship between the demand of a good and factors affecting demand.

  $D = f(Px, Pr, Y, T, E, N, Yd)$.

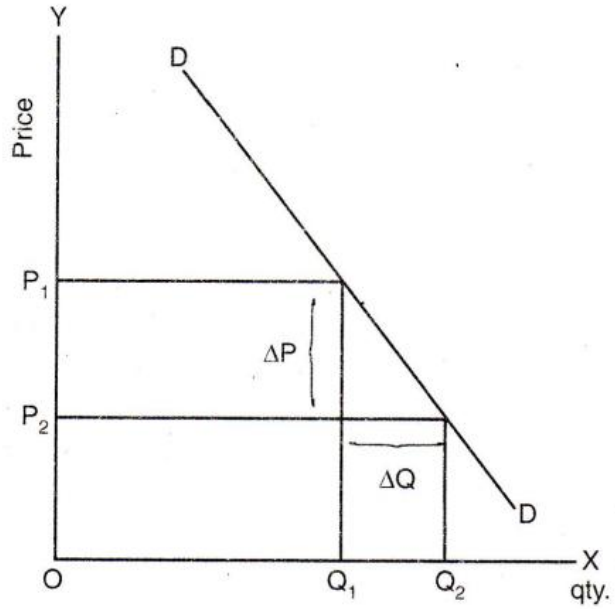
- **Demand Schedule :** Demand schedule is a table which shows the quantity demanded of a commodity at various prices.

- **Law of Demand :** If remaining things are being constant as price of a commodity increases quantity demanded of the commodity decreases and as price of a commodity decreases quantity demanded of the commodity increases, it is called law of 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 quantity of demand changes due to change in own price of commoditiy while other factors remain constant.
- **Demand Curve :** It is a graphical presentation of demand schedule, which shows quantity demanded at various prices of commodity. There is inverse relation between price and quantity demanded of commodity.
- Demand curve and its slope :



$$\text{Slope of demand curve} = \frac{\text{Change in price}}{\text{Change in quantity demanded}}$$

$$= \frac{\Delta P}{\Delta Q}$$

- **Price Elasticity of Demand :** Price Elasticity of Demand is a measurement of change in quantity demanded in response to a change in price of the commodity.
- **Percentage Method :**

$$\text{Ed.} = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$Ed. \rightarrow$ Elasticity of Demand

$\Delta Q \rightarrow$ Change in quantity demanded

$\Delta P \rightarrow$ Change in Price

$P \rightarrow$ Initial Price

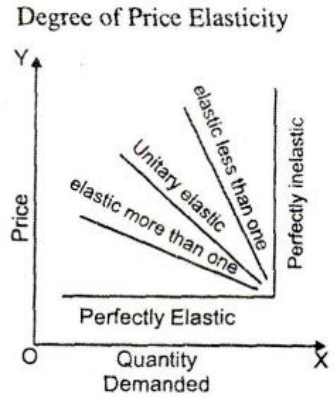
$Q \rightarrow$ Initial Quantity

$$Ed. = \frac{\text{Percentage Change in Quantity demanded of a commodity}}{\text{Percentage Change in Price of commodity}}$$

$$\text{Percentage change in quantity demanded} = \frac{\Delta Q}{Q} \times 100$$

$$\text{Percentage change in price} = \frac{\Delta P}{P} \times 100$$

- Degrees of Price Electricity of demand



- Factors affecting Price elasticity of Demand
  - (a) Nature of the Commodity.
  - (b) Availability of Substitute goods.
  - (c) Income of the consumer.
  - (d) Possibility of postponement of commodity
  - (e) Time Period.
  - (f) Different use of the commodity.
  - (g) Habit of the consumer.

MULTIPLE CHOICE QUESTIONS (1 MARK)

1. Total Utility of a commodity is maximum when-
   (a) Consumption of goods is maximum
   (b) Marginal utility is maximum
   (c) Average utility is maximum
   (d) Marginal utility is zero
2. Marginal Utility of a commodity
   (a) Always decreases with increase in quantity
   (b) Decreases only when total utility decreases
   (c) Decrease but always remain positive
   (d) First increase and start decreasing after reaching maximum point
3. A consumer gets maximum satisfaction, when?
   (a) The price of commodity is minimum
   (b) Total Utility is maximum
   (c) Total utility he gets is equal to total utility he give up in terms of money.
   (d) Utility he gets from last unit is equal to utility he give up in terms of money.
4. A consumer consumes two goods. Consumer is said to be in equilibrium, when:
   (a) Marginal utility of two goods is equal.
   (b) Total utility of two goods is equal.
   (c) Price of two goods is equal.
   (d) Per rupee marginal utility is equal.

5. When marginal utility is negative, total utility_____

(a) Total utility increase at decreasing rate

(b) Total utility starts diminishing

(c) Average utility becomes zero

(d) Total utility becomes negative

6. If price of commodity is zero. The consumer will consume-

(a) Unlimited units of commodity

(b) Till Marginal utility reaches maximum

(c) Till Marginal utility becomes zero

(d) till total utility becomes zero

7. Which of the following condition is necessary for consumer equilibrium in case of one commodity?

(a) $\frac{MU_m}{MU_x} = P_x$ (b) $MU_x = MU_m \times P_x$

(c) $\frac{P_x}{MU_x} = MU_m$ (d) $\frac{MU_m}{P_x} = MU_x$

8. As per consumer's equilibrium theory, to reach consumer's equilibrium a consumer can_____

(a) Decrease the price of the commodity

(b) Increase the Income of the consumer.

(c) Change the quantity of the commodity

(d) Increase the consumption of both goods.

9. The situation of consumer's disequilibrium $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$ arise

(a) due to increase in consumption of good X,

(b) due to decrease in the price of good Y.

(c) due to increase in the price of good X

(d) due to increase in the price of good Y.

10. In case of two commodities a consumer strikes equilibrium when

(a) $\frac{P_x}{MU_x} = \frac{Py}{MUy} = MUm$

(b) $\frac{MUx}{Px} = \frac{MUy}{Py} = MUm$

Px

(c) $\frac{MUx}{Px} = \frac{MUy}{Py} = MRSxy$

(d) $MUm = \frac{MUx}{Px}$

11. Number of Budget sets of a consumer are

(a) Unlimited, but within budget line

(b) Limited, depends upon the Income of consumer

(c) Limited, depends upon price of commodities

(d) Limited, depends upon price and income of consumer.

12. Which of the following is not a characteristic of indifference curve

(a) Indifference Curve is convex to the origin

(b) Higher Indifference Curve indicates higher level of satisfaction

(c) Indifference Curve do not intersect each other

(d) Indifference Curve is concave to the origin

13. Which of the following is not a determinants of individual demand function

(a) Distribution of Income

(b) Price

(c) Income of Consumer

(d) Taste and preferences

14. A consumer demands more quantity of a commodity when price decreases because

(a) Total utility increases and become more than the price

(b) Marginal utility becomes more than price

(c) Marginal utility of money increases with decrease in the price

(d) Marginal utility decreases with decrease in price

15. Demand curve shifts rightward in case of

(a) Decrease in price of the commodity

(b) Decrease in the price of substitute good.

(c) Increase in the price of complementary good.

(d) Increase in the number of buyers

16. Price elasticity of demand of a commodity is - 2.5. Price of commodity increased by 20 percent. What will be the change in quantity demanded?

(a) Decrease by 50 units

(b) Increase by 50 units

(c) Decrease by 8 percent

(d) decrease by 50 percent

17. A consumer has monotonic preferences, find the most preferred bundle by him

(a) 4 units of X good and 6 units of Y good

(b) 6 units of X good and 5 units of Y good

(c) 6 units of X good and 6 units of Y good

(d) 4 units of X good and 5 units of Y good

18. What is the maximum number of Indifference curves of a consumer?

(a) Unlimited numbers of Indifference curves

(b) Upto his maximum satisfaction level

(c) Depends upon his Budget line

(d) Equal to various bundles of budget sets.

19. Slope of the demand curve is zero, its elasticity of demand is

(a) Elasticity of demand is zero

(b) Elasticity of demand is inelastic

(c) Elasticity of demand is infinity

(d) Elasticity of demand is elastic

20. Which of these is not a factor effecting elasticity of demand

(a) Nature of goods

(b) Number of uses of the commodity

(c) Availability of substitute goods

(d) Quantity of the commodity demanded

ANSWERS

1. (d); **2.** (a); **3.** (d); **4.** (d); **5.** (b); **6.** (c); **7.** (b); **8.** (c); **9.** (d); **10.** (b); **11.** (d); **12.** (d); **13.** (a); **14.** (b); **15.** (d); **16.** (d); **17.** (c); **18.** (a); **19.** (c); **20.** (d)

SHORT ANSWER TYPE QUESTION (3-4 MARKS)

1. Explain the relation between total utility and marginal utility with the help of 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 indiference 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 good X.
9. Why does demand of a normal good increases due to increase in consumer's income?
10. Explain following factors affecting Price Elasticity of Demand
    (a) Nature of commodity
    (b) Availability of substitutes
    (c) Postponement of the use
11. Distinguish between expansion of demand and increase in demand with the help of diagram
12. Distinguish between change in demand and change in quantity demanded.
13. What will be the effect of following on elasticity of demand.
    (a) Income level of buyers
    (b) Habit of the consumer
14. What will be the slope of demand curve under following situations.
    (a) Perfectly elastic demand
    (b) Perfectly inelastic demand
    (c) Unit elastic demand
15. State the factors of rightward shift of demand curve. Explain any one.
16. State the factors of leftward shift of demand curve. Explain any one.
17. How does 'a proportion of income spent on the good' affect elasticity of demand.
18. 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 goods.

Calculate price elasticity of demand by using the percentage method. Comment on the likely shape of demand curve based on this measure of elasticity.

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

20. Price elasticity of good X is known to be thrice that of Good Y. If price of the Good X increases by 20% and price of the Good Y decreases by 40% then calculate percentage changes in quantity demanded in both the cases.

21. The price elasticity of good X or Y are equal. The demand of X rises from 100 units to 250 units due to 20 percent fall in its price. Calculate the percentage rise in demand of Y, If its price falls by 8 percent.

22. Explain any four factors/determinantes affecting price elasticity of demand.

23. Fill in the gaps in the following equations :

(i) $MRS = \frac{\Delta ?}{?}$

(ii) $? = \Sigma MU$

(iii) $MU_n = TU_n - ?$

(iv) $e_d = \frac{\Delta Q}{?} \times \frac{P}{Q}$

24. Differentiate between :

(i) Normal goods and Inferior goods

(ii) Complementary goods and substitute goods.

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

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

27. What is budget line? Why is it negatively sloped?

28. A consumer consumes only two goods X & Y State and explain the conditions of consumer's equilibrium with the help of utility analysis.

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

30. Define 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 on a diagram.

2. Explain the determination of consumers equlibrium 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 three properties of indifference curve.

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

   (i) Income effect of inferior good is positive.

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

9. 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 you answer.

10. 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.

Exam. Oriented Questions with Answer

VERY SHORT ANSWER QUESTION (1 MARK)

Q. 1. When does a good is called 'Normal Good'?

Ans. If the income effect of a commodity is positive and price effect is negative, it is called 'Normal Good'.

Q. 2. When does a good is called 'Inferior Good'?

Ans. If the income effect of a commodity is negative, it is called 'Inferior Good'.

Q. 3. Why the demand of water is Inelastic?

Ans. Because water is a necessary good.

Q. 4. Define Market Demand.

Ans. Market Demand refers to various quantities that all the consumers in a market are ready and able to purchase at various prices in a given period of time.

Q. 5. What is the meaning of Marginal Rate of Substitution?

Ans. MRS is the rate at which a consumer is willing to substitute good Y for good X, assuming that there is no change in the level of satisfaction.

Q. 6. What is the meaning of 'Monotonic Preference'.

Ans. Consumer's preference is called monotonic when between any two bundles, consumer give preference to that bundle, which contains more quantity of at least one commodity and not less quantity of other commodity.

Q. 7. Write equation of Budget line

Ans. $M = Px \cdot X + Py \cdot Y$

Q. 8. Write equation of Budget set

Ans. $Px \cdot X + Py \cdot Y \leq M$

3-4 MARKS QUESTIONS

Q. 1. Distinguish between increase in demand and increase in quantity demanded of a commodity.

Ans. When demand increase at given price due to the change in other factor. It is called increase in demand. On the other hand when other things remain constant and demand increase by decrease in the price of a commodity then, it is called increase in quantity demanded.

Q. 2. Given price of a good, how does a consumer decide as to how much of that good to buy?

Ans. Consumer purchases upto the point where marginal utility is equal to the price (MU = P). So long as marginal utility is greater than price, he keeps on purchasing. As he makes purchases MU falls and at a particular quantity of the good MU becomes equal to price. Consumer purchases upto this point.

Q. 3. A consumer consumes only two goods X and Y. State and explain the conditions of consumer's equilibrium with the help of utility analysis.

Ans. There are two conditions of consumer equilibrium.

Explain :

(i) $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

When $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$. In this case, the consumer is getting more marginal utility per rupee in case of good x as compared to good y. Therefore, he will buy more of x and less of y. This will lead to fall in MU_x and rise in MU_y. The consumer will continue to buy more of x till $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$

When $\frac{MU_x}{P_x} < \frac{MU_y}{P_y}$. In this case the consumer is getting more

marginal utility per rupee in case of good y as compared to x. Therefore, he will buy more of y and less of x. This will lead to fall in MU_y and rise in MU_x. The consumer will continue to buy more of y till $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$.

(ii) **MU falls as consumption increases :** If MU does not fall as consumption increases the consumer will end up buying only good which is unrealistic or consumer will never reach the equilibrium position.

Q. 4. Explain how the demand for a good is affected by the price of its substitute goods. Give examples.

Ans. Related goods are either substitutes or complementary.

Substitute Goods : When price of a substitute falls, it becomes cheaper than the given good. So the consumer substitutes it for given good then demand of given good will decreases.

Similarly, a rise in the price of substitute will result in increase in the demand for given good. For example : Tea and Coffee.

Q. 5. Distinguish between Normal Goods and Inferior Goods. Explain with Example.

Ans. **Normal Goods :** These are the goods the demand for which increase as Income of the buyers rise. There is a positive relationship between Income and demand or in case of normal goods income effect is positive.

Inferior Good : There are the goods the demand for which decreases as income of buyer rises. Thus, there is negative relationship between income and demand or income effect is negative.

Q. 6. Explain any four factors that affect price elasticity of demand.

Ans.

1. **Nature of Commodity :** Necessasities like Salt, Kerosene oil etc. have inelastic demand and luxuries have elastic demand.

2. **Availability of substitutes :** Demand for goods which have close substitute is relatively more elastic and goods without close substitutes have less elastic demand.

3. **Different uses :** Commodities that can be put to different uses have elastic demand for instance electricity has different uses.

4. **Habit of the consumer :** Goods to which consumer become habitual will have inelastic demand.

   Example : Liquor and Cigarette.

Q. 7. Explain relationship between total utility and marginal utility with help of a schedule.

Ans.

Quantity (Units)	*Total Utility*	*Marginal Utility*
0	0	–
1	8	8
2	14	6
3	18	4
4	20	2
5	20	0
6	18	–2

(1) As long as MU decreases but is positive, TU increases at decreasing rate.

(2) When marginal utility is equal to zero then total utility is maximum.

(3) When marginal utility is negative. Total utility starts diminishing.

Q. 8. Define marginal utility. State the law of diminishing marginal utility.

Ans. **Marginal Utility :** It is addition to the total utility as consumption is increased by one more unit of the commodity.

Law of Diminishing Marginal Utility : It states that as consumer consumes more and more units of a commodity, the utility derived from each successive unit goes on decreasing. According to this law TU increases at decreasing rate and MU decreases.

6 MARKS QUESTIONS

Q. 1. Explain the three properties of indifference curves.

Ans. Three properties of indifference curves are as follows :

1. **Slopes downward from left to right :** To consume more of one good the consumer must give up some quantity of the other good so that satisfaction remains at the same level.
2. **Convex towards the origin :** MRS declines continuously due to the operation of the law of diminishing marginal utility.
3. **Higher indifference curves represents higher utility :** Higher indifference curve represent large bundle of goods. Which means more utility because of monotonic preference.

Q. 2. Explain the conditions of consumer's equilibrium using indifference curve analysis. Use diagram.

Ans. There are two conditions for consumer's equilibrium.

(i) MRS = Px/Py

(ii) MRS is continuously falling.

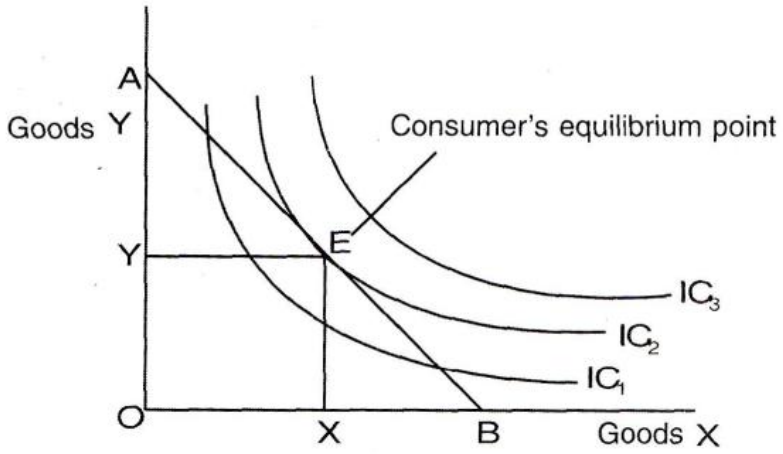
Explanation

Suppose there are two goods X and Y the first condition of consumer's equilibrium is MRS must be equal to the ratio of prices of two goods $\frac{Px}{Py}$

If MRS > Px/Py, It means consumer values X more than what market values and willing to give more price than market price, he will purchase more of X this cause fall in MRS and it will continue upto that when MRS = Px/Py.

If MRS $< \frac{Px}{Py}$. It means consumer values X less than what market values. Consumer is willing to give less price than market price and he will purchase less of X, by this MRS will increase and it will continue till $MRS = \frac{Px}{Py}$.

(ii) MRS is continuously falling unless the equality between the MRS and Px/Py will not be reached.



Consumer is in equilibrium at point E. OX of X and OY of Y is optimum bundle of both goods.

Q. 3. Why does demand curve slope downwards?

Ans. Following is the cause why demand curve slope downward –

(i) **Law of Diminishing Marginal Utility :** According to this law, as consumption of the commodity increases, marginal utility of successive unit goes on diminishing to a consumer. Accordingly, for every additional unit, consumer is willing to pay less and less price.

Q. 4. Explain the effect of change in Income of the consumer on the demand for a good.

Ans. **Normal Goods :** In the situations when the income increases consumer will increase the demand of Normal goods and if the Income decreases consumer will decrease the demand of normal good, because in normal goods, income effect is positive.

Inferior Goods : In the situations when the Income decreases consumer will increase the demand of inferior goods and if the income increases a consumer will decrease the demand of inferior good because in inferior goods, income effect is negative.

Q. 5. A consumer consumes only two goods X and Y both priced at Rs. 3 per unit. If the consumer chooses a combination of these two goods with Marginal Rate of Substitution equal to 3, is he consumer in equilibrium? Give reason. What will a rational consumer do in this situation? Explain.

Ans. Given Px = 3, Py = 3 and MRS = 3, A consumer is said to be in

equilibrium when

$$MRS = \frac{Px}{Py}$$

Substituting values we find that

$$3 > \frac{3}{3}$$

i.e., $MRS > \frac{Px}{Py}$

Therefore consumer is not in equilibrium. $MRS > \frac{Px}{Py}$ means that consume is willing to pay more for one more unit of x as compared to what market demands. The consumer will buy more and more of x. As a result MRS will fall due to the law of Diminishing Marginal Utility. This will continue till $MRS = \frac{Px}{Py}$ and consumer is in equilibrium again.

Q. 6. A consumer consumes only two good x and y whose prices are Rs. 4 and Rs. 5 per unit respectively. If the consumer chooses a combination of the two goods with marginal utility of X equal to 5 and that of Y equal to 4, is the consumer in equilibrium? Give reason. What will a rational consumer do in this situation? Use utility analysis

Ans. Given Px = 4, Py = 5 and MUx = 5, MUy = 4, and consumer will be in equilibrium when

$$\frac{MUx}{Px} = \frac{MUy}{Py}$$

Substituting values, we find that

$$\frac{5}{4} > \frac{4}{5} \text{ or } \frac{MUx}{Px} > \frac{MUy}{Py}$$

Since per rupee MUx, is higher than per rupee MUy, consumer is not in equilibrium.

The consumer will buy more of x and less of y, As a result MUx will fall and MUy will rise. The reaction will continue till $\frac{MUx}{Px}$ and $\frac{MUy}{Py}$ are equal and consumer is in equilibrium again.