Chapter-02
Consumers Equilibrium and Demand

Very Short Answer Type Questions (1Mark)

1. **What is meant by utility?**
   Ans. Utility is the power of goods to satisfy human wants.
2. **How is Total utility derived from marginal utilities?**
   Ans. Total utility is derived by summing up the marginal utilities TU = SMU.
3. **What is Law of Diminishing Marginal Utility?**
   Ans. 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. **What will be the behaviour of total utility when marginal utility is zero?**
   Ans. Total utility will be maximum.
5. **State condition of consumer's equilibrium in respect of one good.**
   Ans. $MU_X = P_x$
6. **Define consumers equilibrium.**
   Ans. Consumers equilibrium refers to a situations in which a consumer gets maximum satisfaction from his given income and market price.
7. **What is meant by Marginal Rate of Substitution (MRS).**
   Ans. MRS is the rate of sacrifice of one good to get an additional unit of other good.
8. **What is meant by budget set.**
   Ans. The set of bundles available to the consumer with his given income at prevailing market price is called the budget set.
9. **Define Indifference curve Map.**
   Ans. A family of indifference curve indicating different levels of satisfaction called indifference map.
10. **How is budget line defined?**
    Ans. 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. **Why does higher indifference curve give more satisfaction?**

Ans. 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. **What is the impact of diminishing marginal rate of substitution on the slope of indifference curve?**
    Ans. Indifference curve become convex towards the origin.
13. **Define monotonic preference.**
    Ans. 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. **How is market demand schedule derived with the help of individual demand schedules?**
    Ans. By summations of individual schedules.
15. **Define normal good.**
    Ans. 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. **How does availability of substitute good affect the elasticity of demand?**
    Ans. The demand of a good becomes elastic if its substitute good is available in the market.
17. **Demand of good 'X' falls due to increase in the income of the consumer what type of good 'X' is?**
    Ans. Good 'X' is an inferior good.
18. **What will be the impact on demand of the good due to increase in price of the substitute good?**
    Ans. The demand of the good will increase.
19. **A rise in price of a good results in a decrease in expenditure of it. Is its demand elastic or inelastic?**
    Ans. Elastic.
20. **What is meant by market demand?**
    Ans. 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. **Define demand schedule.**
    Ans. Demand schedule is a tabular representation which represent different quantities of the commodity demanded at different prices.
22. **What cause an upward movement along a demand curve?**

Ans. Increase in price while other factors are constant.

23. **If the number of consumers increase, in which direction will the demand curve shift?**
    Ans. Rightward.
24. **A straight line demand curve is given. What will be elasticity of demand on the mid point of this curve.**
    Ans. Equal to unit.
25. **If the slope of a demand curve is parallel to X-axis, what will be the elasticity of demand?**
    Ans. Perfectly elastic.
26. **Why is demand of water inelastic?**
    Ans. Because water is a necessity good.
27. **Define price elasticity of demand.**
    Ans. The price elasticity of demand is the degree of responsiveness of quantity demanded of a commodity to the change in its price.

Short Answer Type Questions(3-4 Marks)

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

   Ans. When demand increases at given price then it is called 'increase in demand'. On the other hand, when demand increases by decrease in the price of a commodity then it is called increase in quantity demand.

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

   Ans. Consumer purchases up to 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 up to this point.

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

   Ans. There are two conditions of consumer equilibrium :

   $$\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$$

   Explanation :

   If, $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$ the consumer is not in equilibrium because he can raise his total utility by buying less of Y and more of X.

   Similarly if $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$ the consumer is not in equilibrium as he can raise his total utility by buying less of X and more of 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.

4. **Explain how the demand for a good is affected by the price of its related goods. Give examples.**
   Ans. Related goods are either substitutes or complementary
   Substitutes Goods : When price of a substitute falls, it becomes cheaper than the given good. So the consumer substitutes it for given good will decrease. Similarly, a rise in the price of substitute will result in increase in the demand for given good.
   For example Tea and Coffee.
   Complementary Goods : When the price of a complementary good falls its demand rises and the demand for the given good will increase. Similarly when price of complementary good increases, then demand for given good decreases.
   For example : – Car & Petrol.
5. **Distinguish between normal goods and inferior goods. Give example also.**
   Ans. Normal Goods : These are the goods the demand for which increases as income of the buyer rises. There is a positive relationship between income and demand or income effect is positive.
   Example ; Rice, Wheat
   Inferior Goods : These 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.
   Example : coarse grain, coarse cloth.
6. **Explain any four factors that affect price elasticity of demand.**
   Ans.
   1. **Nature of Commodity** : Necessaries like Salt, Kerosene oil etc. have inelastic demand and luxuries have elastic demand.
   2. **Availability of substitutes** : Demand for goods which have close substitutes is relatively more elastic and goods without close substitutes have less elastic demand.
   3. **Different uses** : Commodities that can be put to different use have elastic demand for instance electricity has different uses.
   4. **Habit of the consumer** : Goods to which consumers become habitual will have inelastic demand.
      Examples – Liquor and Cigarette.
7. **Explain relationship between total utility and marginal utility with the 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 is positive, TU increases.
2. When marginal utility is equal to zero then total utility is maximum.
3. When marginal utility is negative; Total utility starts diminishing.

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

Ans. Marginal Utility : It is addition more 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.

Higher Order Thinking Skills

1. **Why does total utility increases at diminishing rate due to continuous increase in consumption?**
   Ans. 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.
2. **Due to decrease in price of pen why does the demand of ink increase?**
   Ans. These are complementary goods.
3. **What will be the behaviour of total utility when marginal utility curve lies below X-axis?**
   Ans. Total utility start to decline.
4. **When is demand inelastic?**
   Ans. When percentage change in quantity demanded is less than percentage change in price, the demand is said to be inelastic.
5. **Give two examples of normal goods & inferior goods.**
   Ans. Normal goods – Rice, Wheat
   Inferior goods – coarse grain, coarse cloth.
6. **Determine how the following changes (or shifts) will affect market demand curve for a product.**
   a. **A new steel plant comes up in Jharkhand people who were previously unemployed in the area are now employed. How will this affect the demand for colour T.V. and Black and White T.V. in the region?**
   b. **In order to encourage tourism in Goa. The Government of India suggests Indian Airlines to reduce air fare to Goa from the four major cities of Chennai, Kolkata, Mumbai and New Delhi. If the Indian Airlines reduces the fare to Goa, How will this affect the market demand curve for air travel to Goa?**
   c. **There are train and bus services between New Delhi and Jaipur. Suppose that the train fare between the two cities comes down. How will this affect demand curve for bus travel between the two cities?**

Ans:

a. There will be rightward shift in market demand curve for colour and Black and White T.V. This is because of increase of income of the people due to employment in the new steel plant.
b. The demand for travel to Goa will expand in response to reduction in the air fare. However, this will be reflected by a movement along the demand curve. There will be no shifts in the demand curve.
c. As train fare comes down the demand for bus travel will reduce. Demand curve for the bus travel will shift to the left showing less demand at the same price.

7. **If a good can be used for many purposes, the demand for it will be elastic. Why?**
   Ans: If a good can be used for many purposes , the demand for it will be more elastic because with a decrease in its price it is put to several uses and with a rise in its price it is withdrawn from its many existing uses. So that, there is a considerable change in demand in response to some change in price.
8. **"If a product price increases, a family's spending on the product has to increase." Defend or refute.**
   Ans: When product price increases, expenditure on the commodity will not increase in the situation when Ed>1 (elasticity of demand is greater than unity). It will increase only in situation when Ed<1. In a situation when Ed=1. Expenditure will remain constant, even when prices rise.
9. **Suppose there are 30 consumers for a good, having identical demand function: d(p) =10-3P for any price less than or equal to 10/3 and d(p)=0 for any price greater than 10/3. Write the market demand function.**
   Ans: Market demand function is simply a horizontal summation of individual demand functions. Since demand function for all the 30 consumers is identical, we can write market demand simply as 'individual demand function multiplying by a factor of 30'.
   Thus: Individual demand function :
   D(p)= 10-3P
   Market demand function:
   Md(p)=10 x 30 – 3 (30)P
   = 300-90 P.
10. **How would you comment on the elasticity of demand when 8% decrease in price of a commodity causes 2% increase in expenditure of the commodity?**

Ans: Elasticity of demand must be greater than unity (implying a situation of elastic demand) when expenditure on the commodity responds inversely to any change in price of the commodity.

11. **A dentist was charging Rs. 300 For a standard cleaning job and per month it used to generate TR is equal to Rs. 30,000. She has since last month increased the price of dental cleaning to Rs.350. As a result fewer customers are now coming for dental cleaning, but the TR is now Rs. 33,250 .From this , what can we conclude about the elasticity of demand for such a dental service?**

    Ans.

Price	**Total Expenditure**
300	30,000
350	33,250

    When price increases, total expenditure also increases. So elasticity is less than one.

12. **The elasticity of demand for X is twice the elasticity of demand for Y. Price of X falls by 5% and Price of Y rises by 5% . What will be the % change in the quantity demanded of X and Y?**

    Ans. Suppose elasticity of demand for Y = 1 , and elasticity of demand for X will be = 2
    So, % decrease in qt. demanded of Y will be 5% , because price rises by 5%, and % increase in qt. demanded of X will be 10% , because price falls by 5% .

13. **If prices of salt and ciggrates, both rises by 10% , will the qt. demanded of both goods affected in an equal manner?**

    Ans No, because the nature of the two goods is different. Salt , a necessary good, will have constant consumption and marginal consumers will reduce the consumption of cigarettes, which is non-essential.

14. **Given e_D = - 0.02, and percentage increase in price = 20%, find change in expenditure on the commodity.**

    Ans.

$$\frac{\Delta q}{p} \times 100 = 20$$

$$\uparrow$$

$$\textit{Percentage change in price}$$

$$e_D = -0.02, so\ that$$

$$\frac{\frac{\Delta q}{p}\times 100}{\frac{\Delta p}{p}\times 100} = -0.02$$

OR

$$\frac{\frac{\Delta q}{q}\times 100}{20} = -0.02$$

OR

$$\frac{\Delta q}{q}\times 100$$

(%change in quantity demanded)=-0.02✕20=-0.4

Implying 4% decrease in quantity demanded owing to 20% increase in price of the commodity.

We know,

Old expenditure = P✕Q

New expenditure =P(1+0.2)✕Q(1-0.04)

Percentage change in expenditure

$$= \frac{New\exp enditure - Old\exp enditure}{Old\exp enditure}\times 100$$

$$= \frac{P(1+0.2)\times Q(1-0.04) - PQ}{PQ}\times 100$$

$$= \frac{PQ(1.2)(0.96) - PQ}{PQ}\times 100$$

$$= \frac{\left[(1.2)(0.96) - 1\right]PQ}{PQ}\times 100$$

=1.152-1✕100

=0.152✕100 =15.2

Implying that expenditure on the commodity increases by 15.2% owing to increase the commodity by 20%. Which is why ed is less than 1.