## UNIT 2

## CONSUMER EQUILIBRIUM AND DEMAND

**KEY CONCEPTS**

1. UTILITY
   - A) MARGINAL UTILITY
   - B) LAW OF DIMINISHING MARGINAL UTILITY
2. CONDITIONS OF CONSUMER'S EQUILIBRIUM
3. INDIFFERENCE CURVE ANALYSIS
4. THE CONSUMER'S BUDGET
   - A) BUDGET SET
   - B) BUDGET LINE
5. PREFERENCES OF THE CONSUMER
   - A) INDIFFERENCE CURVE
   - B) INDIFFERENCE MAP
6. CONDITIONS OF CONSUMER'S EQUILIBRIUM
7. DEMAND
   - A) INDIVIDUAL DEMAND
   - B) MARKET DEMAND
   - C) DEMAND SCHEDULE
   - D) DEMAND CURVE
8. DETERMINANTS OF DEMAND
9. MOVEMENT ALONG THE DEMAND CURVE
   - A) EXTENSION
   - B) CONTRACTION
10. SHIFT IN THE DEMAND CURVE
    - A) INCREASE IN DEMAND
    - B) DECREASE IN DEMAND
11. MEASUREMENT OF PRICE ELASTICITY OF DEMAND
    - A) TOTAL EXPENDITURE METHOD
    - B) PROPORTIONATE METHOD
    - C) GEOMETRIC METHOD
12. FACTORS AFFECTING PRICE – ELASTICITY OF DEMAND

**<u>ONE MARK QUESTIONS AND ANSWERS</u>**

1. What do you mean by utility?

Ans :- Utility is the <u>want satisfying power</u> of a commodity.

2. How is total utility derived from marginal utility?

Ans :- Total utility is the sum total of marginal utilities of various units of a commodity.

TUn= MU1+MU2+MU3------ +MUn

3. State the law of equi-marginal utility.

Ans :- It states that a consumer gets maximum satisfaction when the ratio of the marginal utilities of two goods and their prices is equal i.e., MUx / Px = MUy / Py

4. What will you say about MU when TU is maximum?

Ans :- MU is zero when TU is maximum

5. Give the reason behind a convex indifference curve.

Ans :- Diminishing marginal rate of substitution.

**HOTS QUESTIONS**

1. Give the formula for calculating the slope of the budget line.

Ans :- It is equal to the ratio of the prices of the two commodities , i.e., Px / Py

2. Suppose a consumer's preferences are monotonic. What can you say about his preference ranking over the bundles (10,10),(10,9) and (9,9)?

Ans :- Consumer will monotonically prefer bundle (10,10) to (10,9) and (9,9) and also prefer bundle (10,9) to (9,9)

3. A rise in the income of the consumer leads to a fall in the demand for commodity 'x'. What type of good is commodity 'x'?

Ans :- Inferior good

4. What do you mean by substitute and complementary goods? Give two examples each.

   Ans :- Substitute goods are those goods which can be used in place of each other. Ex. Tea and Coffee. Complementary goods are those goods which are used together to satisfy a given want. Ex : Car and petrol.

5. Mention one factor that causes a left ward shift of the demand curve.

   Ans :- Fall in income of a consumer.

6. What causes a movement along the demand curve of a commodity?

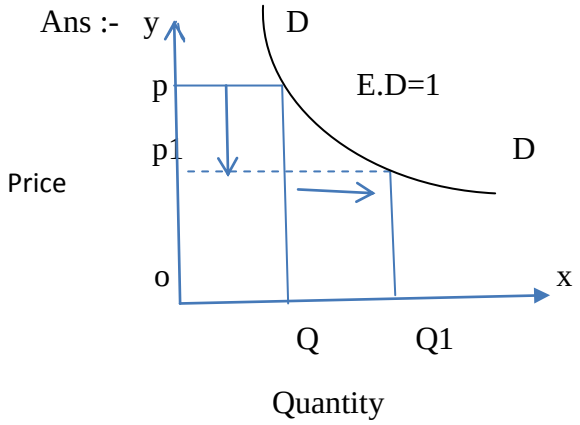
   Ans :- When the price of a commodity changes and other factors remain constant , there will be movement along the demand curve.

7. What is demand function?

Ans: - A demand function shows the functional relationship between the quantity demanded and the factors on which demand depends on.

8. Draw a demand curve with unitary elasticity.

Ans :-




9. Define price elasticity of demand.

Ans :- It refers to the degree of responsiveness of quantity demanded to change in price.

**3. AND 4 MARKS QUESTIONS & ANSWERS**

1. Explain the law of Diminishing Marginal Utility with the help of a table and a diagram.

Ans :- The law of diminishing Marginal Utility states that as we consume more and more units of a commodity, the MU derived from the successive units of that commodity goes on decreasing. It is explained with the help of following schedule and diagram.

Relationship between MU and TU :

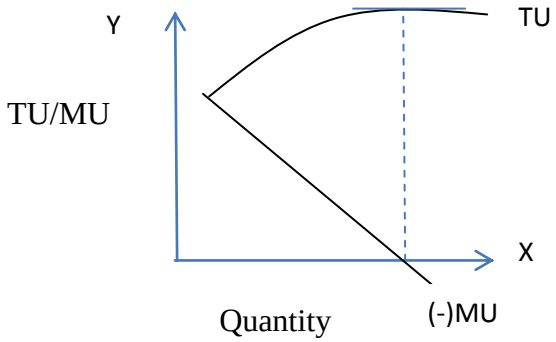
i) When MU is positive TU rises.

ii) When MU is zero TU is maximum.

iii) When MU is negative, TU falls

| UNITS | TU | MU |
|---|---|---|
| 1 | 8 | 8 |
| 2 | 14 | 6 |
| 3 | 18 | 4 |
| 4 | 20 | 2 |
| 5 | 20 | 0 |
| 6 | 18 | -2 |

Diagram:




2. What is meant by consumer's equilibrium? State its conditions in case of two commodities approach.

a) Meaning: A consumer is to be equilibrium when he is spending his given income on various goods and services to get maximum satisfaction.

b) Conditions:

i) MUx / Px = MUy / Py (MUs are equal to their prices)

ii) Px x Py + Py x Qy =

iii) M ( Money spent is equal to income)

3. What is the difference between cardinal and ordinal utility analysis.

| S.No. | **Cardinal Utility** | **Ordinal Utility** |
|---|---|---|
| 1 | Given by Prof. Alfred Marshall | Given by Prof. J.R. Hicks |
| 2 | Utility can be measured numerically | It cannot be measured numerically |
| 3 | Unit of measurement is 'utils' | Possible for a consumer to scale his preferences. |

4. Explain any three determinants of demand for a commodity.

Ans :- Following are the three determinants of demand for a commodity.

i) Price of the commodity:- When the price of a commodity increases the demand for that commodity decreases and vice versa.

ii) Income of the consumer:- When the income increases the demand for that commodity also increases and vice-versa.

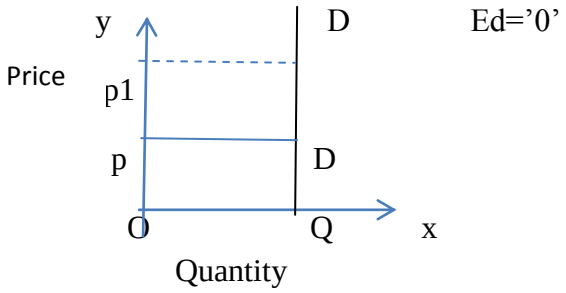
iii) Price of related goods :-

a) In complementary goods demand rises with fall in price.

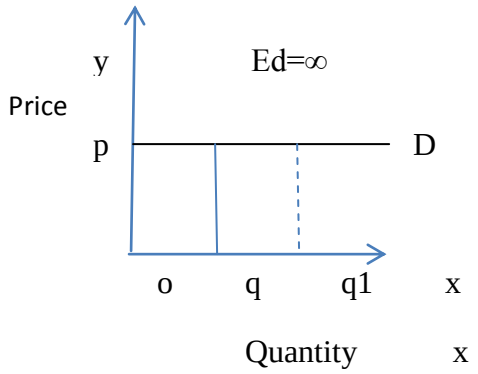
b) In substitute goods demand for a commodity falls with a fall in the price of other substitute goods.

5. Draw a) perfectly elastic demand curve, b) perfectly in-elastic demand curve and c) unitary elastic demand curve.

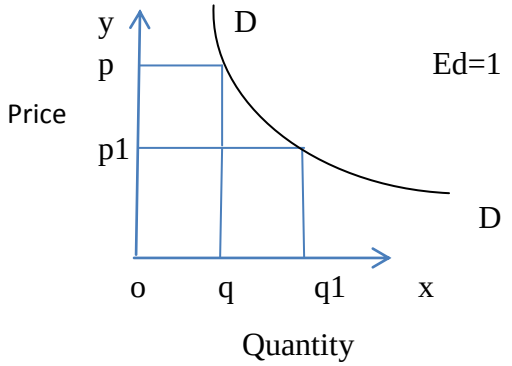
Ans :- a) perfectly in-elastic demand




b) perfectly elastic



c) unitary elastic demand




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

Ans :- Following are the factors affecting price elasticity of demand.

a) Nature of the commodity.
b) Level of income.
c) Availability of substitutes.
d) Tastes and preferences.
e) Possibility of postponement of use.
f) Various uses of the commodity.

**HOTS**

1. Is the demand for the following elastic, moderate elastic, highly elastic? Give reasons.

   (i) Demand for petrol
   (ii) Demand for text books
   (iii) Demand for cars
   (iv) Demand for milk

   Ans :- i) Demand for petrol is moderately elastic , because when the price of the petrol goes up , the consumer will reduce the use of it.

   ii)Demand for text books is completely inelastic. In case of text books, even a substantial change in price leaves the demand unaffected.

   iii) Demand for cars is elastic. It is a luxury good, when the price of the car rises, the demand for the car comes down.

   iv) Demand for milk is elastic, because price of the milk increases then the consumer purchase less quantity milk.

2. What is the relationship between slope and elasticity of a demand curve?

   Ans :- The formula of Ed is Ed= $\Delta Q / \Delta P * P / Q$

   The formula for the slope of the demand curve is , slope = $\Delta P / \Delta Q$

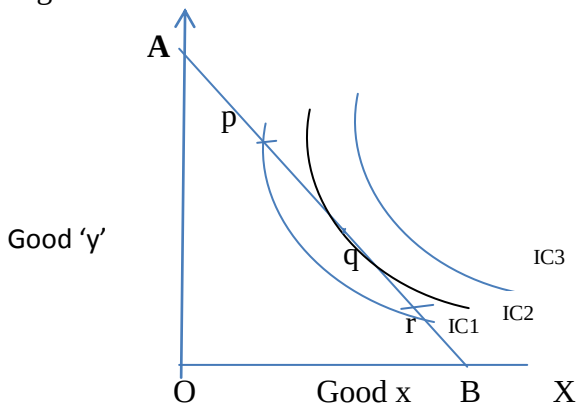
   The relationship between slope and elasticity of demand is , Ed=1 / slope * P/Q

## 6 MARK QUESTIONS

3. How is equilibrium achieved with the help of indifference curve analysis?

Ans :- a) definition: In the indifference curve approach, consumer's equilibrium is achieved at the point at which budget line just touches a particular indifference cure, i.e. the point, at which the budget line is tangent to a particular indifference curve. This is the point of maximum satisfaction.

b) Diagram:




c) Diagram Explanation:

i) 'AB' is the budget line.

ii) It is sure that consumer's equilibrium will lie on some point on 'AB'

iii) Indifference map (set of IC1 , IC2 , IC3) shows consumers scale of preferences between different combinations of good 'x' and good 'y'

iv) Consumers equilibrium will achieve where budget line (AB) is tangent to the IC2.

d) Essential conditions for consumers equilibrium:

i) Budget line must be tangent to indifference curve i.e., MRS xy = Px / Py

ii) Indifference curve must be convex to the origin.

e) Consumers cannot achieve the following:

i) P and 'r' points on budget line give satisfaction, but, choosing point 'q' puts him on a higher IC gives more satisfaction.

ii) He cannot move on IC3 , as it is beyond his money income.

4. Explain the effect of the following on the market demand of a commodity.

   a. Change in price of related goods
   b. Change in the number of its buyers.

Ans :- i) Meaning: Market demand is the aggregates of the quantities demanded by all the consumers in the market at different prices.

ii) Factors affecting market demand :

a) Price of the commodity: When the price goes up demand for its falls and vice-versa.
b) Income of the consumers: When the income of the consumers goes up the demand for a commodity also goes up.
c) Price of related goods :
   i) Complementary goods :The demand for a commodity rises with a fall in the price of its complementary good (Car and petrol)
   ii) Substitute goods: Demand for a commodity falls with a fall in the price of other substitute good (Tea& Coffee).
d) Tastes and preferences: Any favourable change in consumers' tastes will lead to increase in market demand and any unfavourable change in consumers tastes will lead to decrease in market demand.
e) Consumer's group: More the consumers more will be market demand and vice-versa.

5. Explain the various degrees of price elasticity of demand with the help of diagrams.

Ans:- There are five degrees of price elasticity of demand. They are,

a) Perfectly elastic demand (Ed=∞):- a slight or no change in the price leads to infinite changes in the quantity demanded.

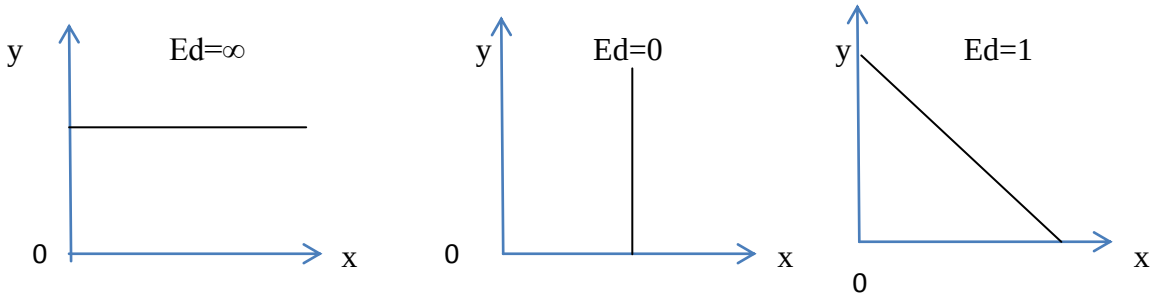
b) Perfectly Inelastic demand (Ed=0) :- Demand of a commodity does not change at all irrespective of any change in its price.

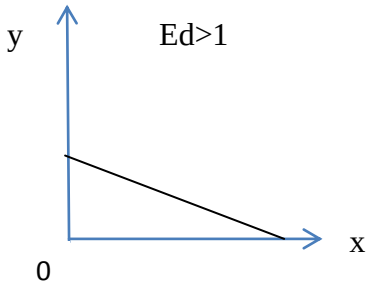
c) Unitary elastic demand (Ed=1):- When the percentage change in demand (%) of a commodity is equal to the percentage change in price.

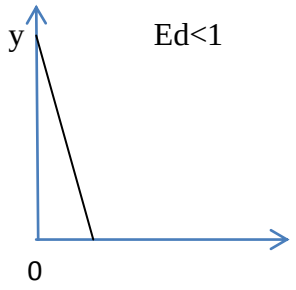
d) Greater than unitary elastic demand (Ed>1):- When percentage change in demand of a commodity is more than the percentage change in its price.

e) Less than unitary elastic demand (Ed<1) :- When percentage change in demand of a commodity is less than the percentage change in its price.

Diagrams






Numerical for practice

6. Derive the total utility schedule from the marginal utility.

| Units consumed | Marginal utility |
|---|---|
| 1 | 12 |
| 2 | 11 |
| 3 | 8 |
| 4 | 6 |
| 5 | 3 |
| 6 | 0 |

7. A consumer buys 50 units of a good at Rs. 4/- per unit. When its price falls by 25 percent its demand rises to 100 units. Find out the price elasticity of demand.

Ans:- Ed=4

8. Price elasticity of demand for wheat is equal to unity and a household demands 40 Kg of wheat when the price is Rs.1 per kg. At what price will the household demand 36 kg of wheat?

Ans:- The price of wheat rises to Rs.1.10 per kg.

9. The quantity demanded of a commodity at a price of Rs.10 per unit is 40 units. Its price elasticity of demand is -2. Its price falls by Rs.2/- per unit. Calculate its quantity demanded at the new price.

Ans :- 56 units.