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SUGGESTED SOLUTION

SYJC

SUBJECT- ECONOMIC

Test Code - SYJ 6052 B

BRANCH - () (Date :)

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ANSWER : 1**(A)**

1. horizontal to OX- axis
2. substitute
3. negative

(03)**(B)**

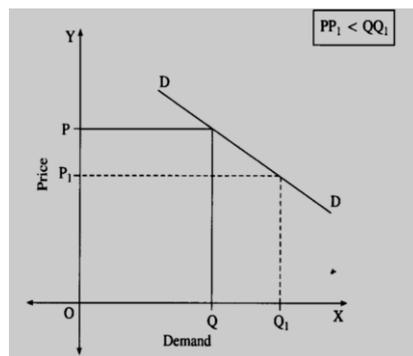
1. True
2. False
3. True

(03)**(C)**

1. Necessary goods/ complementary goods / Medicines – Inelastic demand
2. Luxury commodities – Elastic demand

(02)**ANSWER : 2****(03)****(A)****1. Elastic Demand**

When the proportionate change in the price of a commodity brings about greater than proportionate change in its quantity demanded, the demand is said to be relatively elastic. The numerical value of relatively elastic demand is greater than one. For example, if the price of a commodity falls by 25 percent, its demand rises by 50 per cent.



In the case of relatively elastic demand, the demand curve is a flatter line.

2. Income elasticity of demand

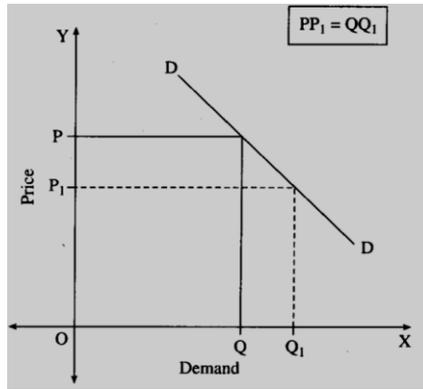
- (i) Income elasticity of demand can be defined as the percentage change in the quantity demanded of a commodity in response to a change in the income of the consumer.
- (ii) Income elasticity of demand is calculated with the help of the following formula :

$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

3. Unitary elastic demand

When the proportionate change in the price of a commodity brings about exactly equal proportionate change in its quantity demanded, the demand is said to be unitary elastic. The numerical value of unitary elastic demand is one.

For example, if the price of a commodity falls by 25 per cent, its demand also rises by 25 per cent.



In the case of unitary elastic demand, the demand curve is rectangular hyperbola.

(B)

(03)

1. Demand for habitual/ habitually used goods is (normally) inelastic.

- (i) The demand for a habitual commodity does not change even if other factors such as price, income, taxes, etc. gets changed.
- (ii) For example, due to habit, a smoker's demand for cigarette remains almost fixed. Therefore, the demand for habitual/ habitually used goods is (normally) inelastic.

2. Goods having snob appeal have inelastic demand.

- (i) Goods having snob appeal such as luxurious cars, posh bungalows are generally demanded by rich people.
- (ii) the elasticity of demand tends to be inelastic with a rise in the income level. As its effect, the demand for goods having snob appeal remains almost fixed. Therefore, the goods having snob appeal have inelastic demand.

3. The commodity having multiple uses has elastic demand.

- (i) When the price of commodity having multiple uses rises, consumers restricts its uses and therefore its demand falls. Similarly, when the price of such a commodity falls, consumers use it for various purposes and therefore its demand rises.
- (ii) Thus, the demand for the commodity having multiple uses changes as a response to the change in its price. Therefore, the commodity having multiple uses has elastic demand.

ANSWER : 3

(03)

(A)

1. Relatively Elastic Demand and Relatively Inelastic Demand

Point	Relatively Elastic Demand	Relatively Inelastic Demand
1. Meaning	When the proportionate change in the price of a commodity brings about greater than proportionate change in its quantity demanded, the demand is said to be relatively elastic.	When the proportionate change in the price of a commodity brings about lesser than proportionate change in its quantity demanded, the demand is said to be relatively inelastic.
2. Numerical Value	In the case of relatively elastic demand, the numerical value of the elasticity of demand is greater than one.	In the case of relatively inelastic demand, the numerical value of the elasticity of demand is lesser than one.

2. Percentage Method of Measuring Elasticity of Demand and Geometric Method of Measuring Elasticity of Demand :

Point	Percentage Method of Measuring Elasticity of Demand	Geometric Method of Measuring Elasticity of Demand
1. Meaning	In the percentage method, the elasticity of demand is measured by dividing the percentage change in the quantity demanded by the percentage change in price.	In the geometric method, the elasticity of demand is measured at any given point on linear as well as non – linear demand curve.
2. Formula	$E_d = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in Price}}$	$E_d = \frac{\text{Lower segment of the demand curve below the give point}}{\text{Upper segment of the demand curve above the given point}}$

(B)

(03)

1. Ratio method:

- (1) Ratio method of measuring elasticity of demand is developed by Dr. Alfred Marshall. This method is also known as arithmetic method or percentage method or proportional method of measuring elasticity of demand.
- (2) In this method, the elasticity of demand is measured by dividing the percentage change in the quantity demanded of a commodity by the percentage change in its price.
- (3) The formula used for the measurement of the elasticity of demand is as follows :

$$E_d = \frac{\text{Proportionate change in the quantity demanded}}{\text{Proportionate change in the price}}$$

Symbolically,

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

Where, (i) ΔQ – Change in the quantity demanded, i.e. $Q_1 - Q$ i.e. New Demand – Original Demand,

(ii) ΔP = Change in the price, i.e. $P_1 - P$, i.e. New Price – Original Price

(i) P = Original Price and

(ii) Q = Original Demand.

- (4) Ratio method can be explained with the help of the following example :

	Price (Rs.)	Demand (per day in units)
Original	200	1000
New	100	1500

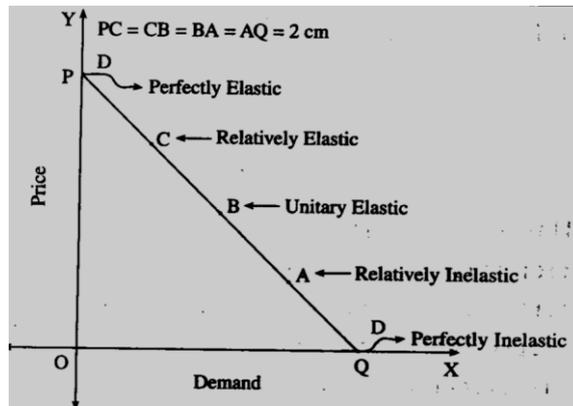
$$E_p \frac{(1500-1000)}{(100-200)} \times \frac{200}{1000} = \frac{500}{-100} \times \frac{200}{1000} = -1 = 1$$

(By eliminating negative sign)

As the numerical value of the elasticity of demand is 1, the demand is unitary elastic in this example.

2. Geometric method :

- (1) Geometric method of measuring elasticity of demand is also developed by Dr. Alfred Marshall. This method is also known as point method of measuring elasticity of demand.
- (2) This method is used to find out the elasticity of demand at any given point on a demand curve.
- (3) For measuring the elasticity of demand at a given point on the linear demand curve, the linear demand curve can be extended to meet the Y – axis at P and X – axis at Q as follows :



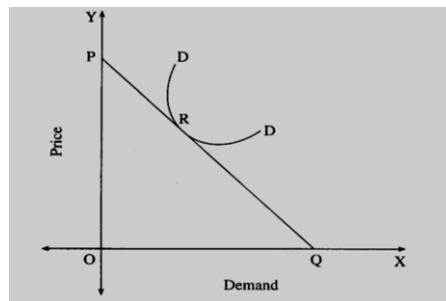
The price elasticity of demand at a point 'A' can be calculated with the help of the following formula:

$$E_d = \frac{\text{Lower segment of the demand curve below the given point}}{\text{Upper segment of the demand curve above the given point.}}$$

$$E_d = \frac{AQ}{AP} = \frac{2}{6} = 0.33$$

At point 'A' the numerical value of elasticity of demand is less than one ($E_d = 0.33$). Therefore at point 'A' the demand is relatively inelastic.

For measuring the elasticity of demand at a given point on the non – linear demand curve, tangent from a given point touching the Y – axis and X – axis is drawn as follows : $RQ = 6$ cm, $RP = 2$ cm



The price elasticity of demand at a point 'R' can be calculated with the help of the following formula:

$$E_d = \frac{RQ}{RP} = \frac{6}{2} = 3$$

At Point 'R' the numerical value of elasticity of demand is greater than one. ($E_d = 3$). Therefore at point 'R' the demand is relatively elastic.

ANSWER : 4

(06)

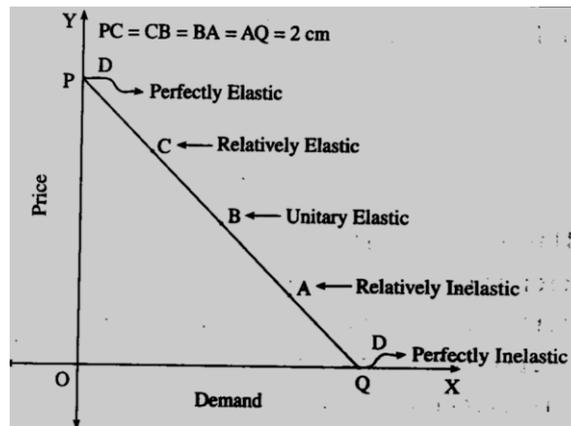
1. Price elasticity of demand cannot be measured by using geometric method.

No, I do not agree with this statement.

Geometric method :

- (1) Geometric method of measuring elasticity of demand is also developed by Dr. Alfred Marshall. This method is also known as point method of measuring elasticity of demand.
- (2) This method is used to find out the elasticity of demand at any given point on a demand curve.

- (3) For measuring the elasticity of demand at a given point on the linear demand curve, the linear demand curve can be extended to meet the Y – axis at P and X – axis at Q as follows :



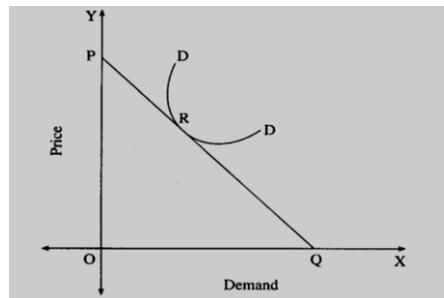
The price elasticity of demand at a point 'A' can be calculated with the help of the following formula:

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$$E_d = \frac{AQ}{AP} = \frac{2}{6} = 0.33$$

At point 'A' the numerical value of elasticity of demand is less than one ($E_d = 0.33$). Therefore at point 'A' the demand is relatively inelastic.

For measuring the elasticity of demand at a given point on the non – linear demand curve, tangent from a given point touching the Y – axis and X – axis is drawn as follows : $RQ = 6$ cm, $RP = 2$ cm



The price elasticity of demand at a point 'R' can be calculated with the help of the following formula:

$$E_d = \frac{RQ}{RP} = \frac{6}{2} = 3$$

At Point 'R' the numerical value of elasticity of demand is greater than one. ($E_d = 3$). Therefore at point 'R' the demand is relatively elastic.

2. Total outlay method is one of the methods of measuring elasticity of demand.

Yes, I agree with this statement.

- (1) Dr. Alfred Marshall has explained the expenditure method of measuring elasticity of demand. This method is also called as total revenue method. In this method, the elasticity of demand is measured by comparing the change in the total expenditure on a commodity in response to a change in the price of a commodity. This method can be explained with the help of the following schedule :

Example	Price (Rs.)	Demand (Per day in units)	Total Expenditure (Rs.)	Elasticity of Demand
A	1	6	6	Inelastic ($E_d < 1$)
	2	5	10	
B	3	4	12	Unitary ($E_d = 1$)
	4	3	12	
C	5	2	10	Elastic ($E_d > 1$)
	6	1	6	

(2) Inelastic Demand : When a fall in the price of a commodity also leads to a fall in a total expenditure also leads to a fall in a total expenditure on a commodity and vice a versa, then the demand is said to be inelastic. For example, in the above schedule in the case of example A, it can be seen that, as a commodity's price falls from Rs. 2 to Rs. 1, the total expenditure on it also falls from Rs. 10 to Rs. 6. In the case of inelastic demand, the price of a commodity and the total expenditure on a commodity are directly related to each other.

(3) Unitary Elastic Demand : When a fall or a rise in the price of a commodity leads to no change in the total expenditure on a commodity, then the demand is said to be unitary elastic. For example, in the above schedule in the case of example B, it can be seen that, as a commodity's price falls from Rs. 4 to Rs. 3, the total expenditure on it remains same, i.e. Rs. 12.

(4) Elastic Demand : When a fall in the price of a commodity leads to a rise in a total expenditure on a commodity and vice a versa, then the demand is said to be elastic. For example, in the above schedule in the case of example C, it can be seen that, as a commodity's price falls from Rs. 6 to Rs. 5, the total expenditure on it rises from Rs. 6 to Rs. 10. In the case of elastic demand, the price of a commodity and the total expenditure on a commodity are inversely related to each other.

3. Various factors influence the elasticity of demand.

Following are the factors which influence Elasticity of Demand.

- 1. Nature of Commodities :** Commodities may be either necessities or luxuries. Normally, elasticity of demand for necessities is inelastic and for luxuries demand is elastic.
- 2. Durability :** The demand for durable goods is elastic, whereas the demand for perishable goods is inelastic.
- 3. Substitute Goods :** Availability of substitutes also determine Elasticity of Demand. The larger the number of substitutes for a commodity in the market, greater will be the elasticity of demand.
- 4. Uses of a Commodity :** When commodity can be put to several uses, its demand is elastic. The demand for electricity is elastic.
- 5. Price :** Goods, which have very highly price or very low price have inelastic demand.
- 6. Habits :** Habits influence Elasticity of Demand. The demand for goods which satisfy the habits, is normally inelastic. For instance, the demand for cigarettes is inelastic. Also consumption of essential goods cannot be postponed therefore demand for them is inelastic.
- 7. Income of Consumer :** When income level is high demand is normally inelastic, and demand is elastic at a very low level of income.
- 8. Proportion of Expenditure :** Generally when proportion of income spend on a commodity is large, demand for goods tend to be inelastic. For instance for food grains is inelastic.
- 9. Complementary Goods :** By and large, demand for complementary goods is inelastic. Because complementary goods such as motor car and petrol are demanded jointly.

Answer : 5

1. Factors determining elasticity of demand.

(06)

Following are the factors which influence Elasticity of Demand.

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2. Importance of elasticity of demand :

The importance of elasticity of demand can be explained with the help of the following points :

- (1) **Helpful to the Monopolist** : The concept of elasticity of demand helps the monopolist in fixing the prices of his products. If the demand for a commodity sold by the monopolist is inelastic, the monopolist can charge higher price for such a commodity and can earn the maximum profit.
- (2) **Helpful to the Government in framing Taxation Policy** : The concept of elasticity of demand helps the finance minister and the government in framing the taxation policy. If the demand for a particular commodity is inelastic, the government can collect more revenue by imposing heavy taxes on such a commodity. Therefore, generally heavy taxes are imposed on commodities like cigarettes, liquor, etc.
- (3) **Helpful to the Trade Unions** : The concept of elasticity of demand also helps the trade unions in insisting on a rise in the wages of workers. If the demand for a commodity produced by workers is inelastic, the trade union leaders can insist on more wages to the workers.
- (4) **Helpful to the Government in framing International Trade Policy** : The concept of elasticity of demand is helpful to the government in determining the terms and conditions for international trade and framing the export and import policy. If the demand for a commodity exported is inelastic, the country can raise the price of that commodity in the international market. For example, Organization of Petroleum Exporting Countries (OPEC) has increased the prices of oil several times.
- (5) **Help to the government in subsidizing or nationalizing public utilities** : Public utilities like railways have inelastic demand. Therefore to avoid the exploitation of consumers, the government can either subsidise or nationalize such public utilities.

3. The importance of the concept of the elasticity of demand for international trade.

Helpful to the Government in framing International Trade Policy : The concept of elasticity of demand is helpful to the government in determining the terms and conditions for international trade and framing the export and import policy. If the demand for a commodity exported is inelastic, the country can raise the price of that commodity in the international market. For example, Organization of Petroleum Exporting Countries (OPEC) has increased the prices of oil several times.

Answer : 6

(08)

1. Ratio method and Geometric method of measuring elasticity of demand.

(A) Ratio method:

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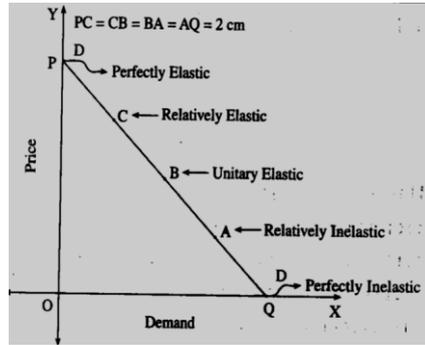
$$E_p \frac{(1500-1000)}{(100-200)} \times \frac{200}{1000} = \frac{500}{-100} \times \frac{200}{1000} = -1 = 1$$

(By eliminating negative sign)

As the numerical value of the elasticity of demand is 1, the demand is unitary elastic in this example.

(B) Geometric method :

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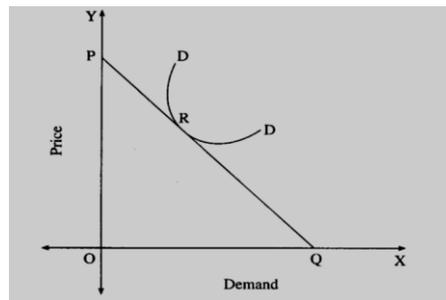
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- (4) For measuring the elasticity of demand at a given point on the non – linear demand curve, tangent from a given point touching the Y – axis and X – axis is drawn as follows : $RQ = 6$ cm, $RP = 2$ cm



The price elasticity of demand at a point 'R' can be calculated with the help of the following formula:

$$E_d = \frac{RQ}{RP} = \frac{6}{2} = 3$$

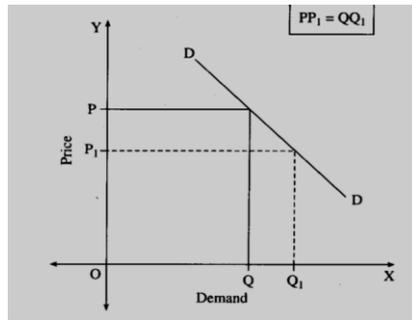
At Point 'R' the numerical value of elasticity of demand is greater than one. ($E_d = 3$). Therefore at point 'R' the demand is relatively elastic.

2.

Types of price elasticity of demand

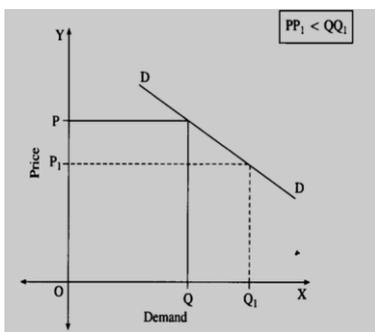
The following are the types of price elasticity of demand :

- (1) **Unitary Elastic Demand** : When the proportionate change in the price of a commodity brings about exactly equal proportionate change in its quantity demanded, the demand is said to be unitary elastic. The numerical value of unitary elastic demand is one. For example, if the price of a commodity falls by 25 per cent, its demand also rises by 25 per cent.



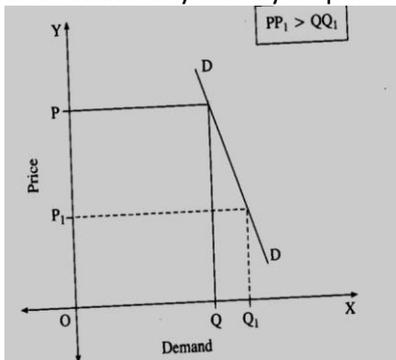
In the case of unitary elastic demand, the demand curve is rectangular hyperbola.

- (2) **Relatively Elastic Demand** : When the proportionate change in the price of a commodity brings about greater than proportionate change in its quantity demanded, the demand is said to be relatively elastic. The numerical value of relatively elastic demand is greater than one. For example, if the price of a commodity falls by 25 per cent, its demand rises by 50 per cent.



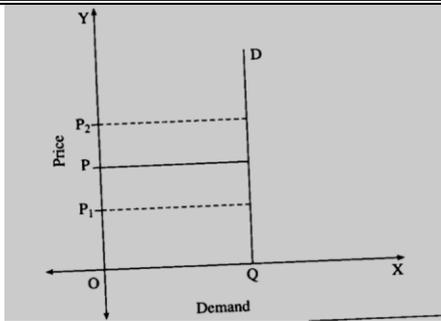
In the case of relatively elastic demand, the demand curve is a flatter line.

- (3) **Relatively Inelastic Demand** : When the proportionate change in the price of a commodity brings about less than proportionate change in its quantity demanded, the demand is said to be relatively inelastic. The numerical value of relatively inelastic demand is less than one. For example, if the price of a commodity falls by 50 per cent, its demand rises only by 25 per cent.



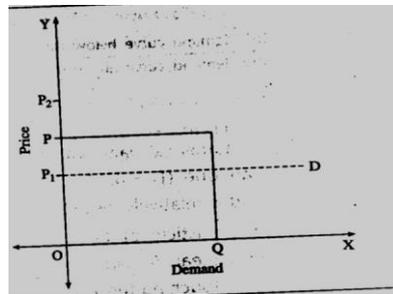
In the case of relatively inelastic demand, the demand curve is a steeper line.

- (4) **Perfectly Inelastic Demand** : When the proportionate change in price of a commodity brings no (zero) proportionate change in its quantity demanded, the demand is said to be perfectly inelastic. The numerical value of perfectly inelastic demand is zero. For example, if the price of a commodity falls by 50 per cent, its demand rises by zero per cent. In practice, such a situation occurs occasionally in the case of necessities such as salt or medicines.



In the case of perfectly inelastic demand, the demand curve is a vertical straight line, parallel to Y – axis.

- (5) **Perfectly/ Infinite Elastic Demand** : When a proportionate change in the price of a commodity brings infinite (unlimited) proportionate change in the quantity demanded, the demand is said to be perfectly elastic. The numerical value of perfectly elastic demand is α . Perfectly elastic demand is only a theoretical possibility.



In the case of perfectly elastic demand, the demand curve is a horizontal straight line, parallel to X – axis.