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**SYJC**

**SUBJECT- ECONOMICS**

**Test Code - SYJ 6052 A**

**BRANCH - () (Date :)**

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Ans. : 1

(A)

1. decrease
2. Derived
3. More elastic

(03)

(B)

1. True
2. False
3. True

(03)

(C)

1. Point method – Geometric method
2. Perfectly elastic –  $E = \alpha$

(02)

Ans. : 2

(A)

(03)

### 1. Cross elasticity of demand

- (i) Cross elasticity of demand can be defined as the percentage change in the quantity demanded of one commodity (say 'x') in response to a given change in the price of another commodity (say 'y').
- (ii) Cross elasticity of demand is calculated with the help of the following formula :

$$E_c = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_y}{Q_x}$$

### 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 :

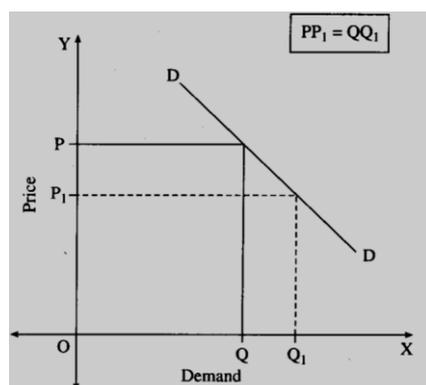
$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

### 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)

**1. Elasticity of demand helps trade union leaders**

- i. If the demand for a commodity produced by workers is inelastic, the trade union leaders can insist on more wages to workers.
- ii. Many times, the trade union leaders insist on rise in the wages of workers producing public utility goods and services as these goods and services have inelastic demand. Thus, the concept of elasticity of demand helps trade union leaders.

**2. Perfectly inelastic demand curve is parallel to 'OY' axis.**

1. When the proportionate change in price of a commodity brings no (zero) proportionate variation in its quantity demanded, the demand is said to be perfectly inelastic.
2. For example, if the price of a commodity falls by 50 per cent, its demand rises by zero per cent. In such case, the demand curve is a vertical straight line. Therefore, perfectly inelastic demand curve is parallel to 'OY' axis.

**3. Multiple uses has elastic demand.**

1. 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.
2. 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.

Ans. : 3

(A)

(03)

**1. Income Elasticity of Demand and Cross Elasticity of Demand**

Point	Income Elasticity of demand	Cross Elasticity of Demand
<b>1. Meaning</b>	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.	Cross elasticity of demand can be defined as the percentage change in the quantity demanded of one commodity (say 'x') in response to the change in the price of another commodity (say 'y').
<b>2. Formula</b>	$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$ Where, (i) $\Delta Q$ = Change in demand (ii) $\Delta Y$ = Change in income (iii) Y = Original income (iv) Q = Original Demand.	$E_c = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_y}{Q_x}$ Where, (i) $\Delta Q_x$ = change in demand for commodity x (ii) $\Delta P_y$ = Change in price of commodity y (iii) $P_y$ = Original price of commodity y. (iv) $Q_x$ = Original demand for commodity x.

**2. Perfectly Elastic Demand and Perfectly Inelastic Demand**

Point	Perfectly Elastic Demand	Perfectly Inelastic Demand
<b>Meaning</b>	When a slight proportionate change in the price of a commodity brings an infinite (unlimited) proportionate change in its quantity demanded, the demand is said to be perfectly elastic.	When the proportionate change in the price of a commodity brings no (zero) proportionate change in its quantity demanded, the demand is said to be perfectly inelastic.

<b>Numerical Value</b>	In the case of perfectly elastic demand, the numerical value of the elasticity of demand is infinite.	In the case of perfectly inelastic demand, the numerical value of the elasticity of demand is zero.
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(B)

(03)

### 1. Significance of Price 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.

### 2. Price Elasticity of Demand

Prof. Marshall has defined price elasticity of demand as below :

“Price elasticity of demand is a ratio of proportionate change in the quantity demanded of a commodity to a given proportionate change in its price.”

Thus, price elasticity is responsiveness of change in demand due to a change in price only. Other factors such as income, population, tastes, habits, fashions, price of substitute and complementary goods are assumed to be constant. Therefore, price elasticity of demand is written as :

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

$$E_d = \frac{\Delta Q/Q}{\Delta P/P} \quad \text{OR} \quad e = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

Where Q = Original demand

P = Original price.

$\Delta Q$  = Change in quantity demanded. It is measured as the difference between new quantity demanded (Say Q1) and old quantity demanded (Q)

$$\text{Thus } \Delta Q = Q_1 - Q$$

$\Delta P$  = Change in price. It is measured as the difference between new price (P1) and old price (P)

$$\text{Thus } \Delta P = P_1 - P$$

Price elasticity of demand may have five values infinite, zero, unit, greater than one and less than one.

Ans.: 4

(06)

**1. 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.

**2. The concept of elasticity of demand has no importance**

**No. I do not agree** with this statement.

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. Various factors influence the elasticity of demand.**

Yes, I agree with this statement.

**(1) Nature of Commodities :** Nature of commodities is one of the important factors influencing the elasticity of demand. For example, the demand tends to be elastic for luxury goods like branded watches, perfumes, etc. and inelastic for necessities like salt, medicines, etc.

**(2) Durability :** Elasticity of demand also gets influenced by the durability of a commodity. Durable commodities such as tables, fans tends to have elastic demand and the perishable commodities such as flowers, fruits tend to have inelastic demand.

**(3) Substitute Goods :** A commodity having larger number of substitutes tends to have elastic demand and vice versa. For example, due to the availability of larger number of substitutes, the demand for cold drinks tends to be elastic. Similarly due to a lack substitutes, the demand for salt is inelastic.

**(4) Uses of Commodity :** A commodity which can be put to several uses has elastic demand. When the price of such a commodity falls, it is put into various uses. Similarly when the price of such a commodity rises, it is put only for important purposes. For example, electricity has elastic demand.

**(5) Price :** High priced goods such as diamond as well as low priced commodities like match box tend to have inelastic demand. On the other hand, the demand for medium priced goods such as perfumes. T – shirts tend to have elastic demand.

**(6) Habits :** The demand for habituated goods tends to be inelastic. For example, a smoker's demand for cigarettes is inelastic.

**(7) Income of consumer :** the demand for commodities tends to be inelastic with a rise in income and elastic with a fall in income. For example, a rich person's demand for a particular commodity may be inelastic, but a poor person's demand for that same commodity may be elastic.

**(8) Proportion of Income Spent :** The demand for a commodity tends to be inelastic when a larger proportion of income is spent on it. For example, usually, the demand for food grains is inelastic as a major part of consumer's income is spent on it.

**(9) Complementary Goods :** Demand for complementary goods is inelastic. Complementary goods are demanded jointly. Therefore, their demand remains almost fixed. For example, the demand only for petrol or car tends to be inelastic.

Ans.: 5

(06)

**1. Concept of elasticity of demand**

**(1)** The elasticity of demand can be defined as the responsiveness of a quantity demanded of a commodity to a change in its price, income of the consumer or the prices of other goods. Elasticity of demand is a technical concept. Price elasticity of demand, Income elasticity of demand and the cross elasticity of demand are the three types of elasticity of demand.

**(2)** Price elasticity of demand can be defined as the percentage change in the quantity demanded of a commodity in response to a given change in its price.

**(3)** Income elasticity of demand can be defined as the percentage change in the quantity demanded of a commodity in response to a given change in the income of a consumer.

**(4)** Cross elasticity of demand can be defined as the percentage change in the quantity demanded of one commodity (say 'x') in response to a given change in the price of another commodity (say 'y').

**2. Factors affecting 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.

**3. Importance of the concept of the elasticity of demand for international trade.**

**(1)** 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.

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

**(A) 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)  $\Delta Q$  – Change in the quantity demanded, i.e.  $Q_1 - Q$  i.e. New Demand – Original Demand,

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

(iii)  $P$  = Original Price and

(iv)  $Q$  = 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

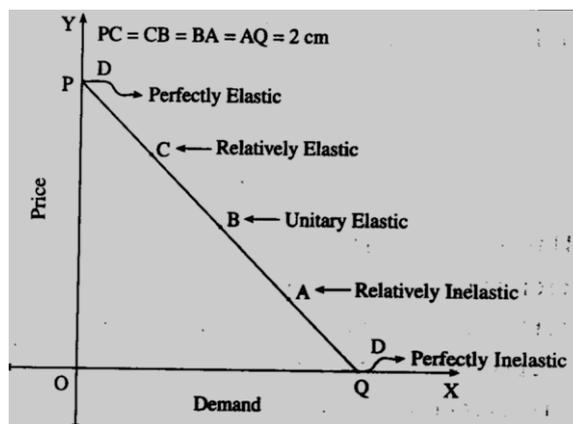
$$E_p \frac{(1500-1000)}{(100-200)} \times \frac{200}{1000} = \frac{500}{-100} \times \frac{200}{1000} = -1 = 1$$

(By eliminating negative sign)

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

**(B) 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 :



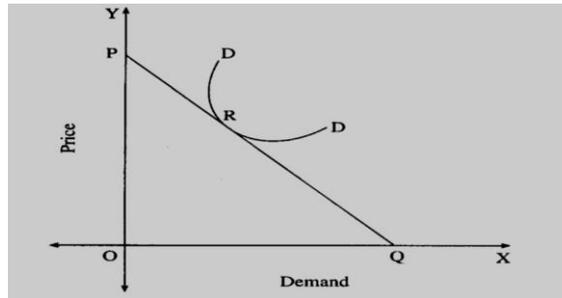
The price elasticity of demand at a point 'A' can be calculated with the help of the following formula:

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

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

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.

- (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:

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

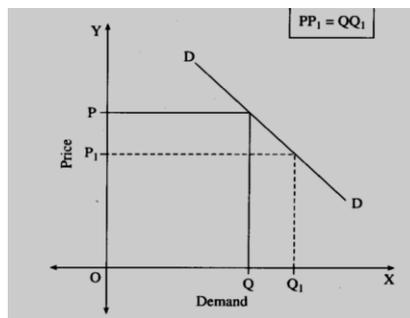
At Point 'R' the numerical value of elasticity of demand is greater than one. ( $E_d = 3$ ). Therefore at point 'R' the demand is relatively elastic.

(08)

## 2. Types of price elasticity of demand

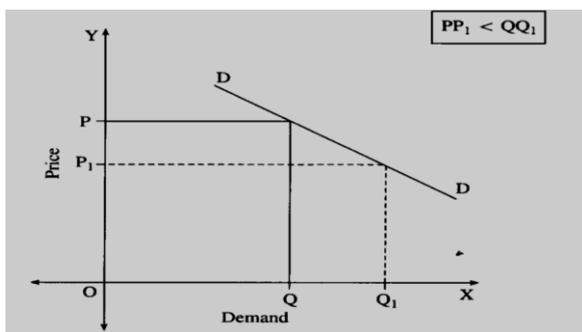
The following are the types of price elasticity of demand :

- (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.



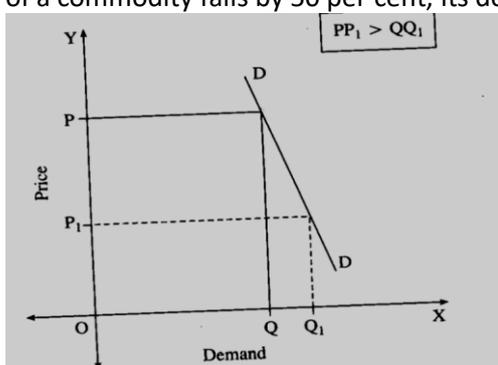
In the case of unitary elastic demand, the demand curve is rectangular hyperbola.

- (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.



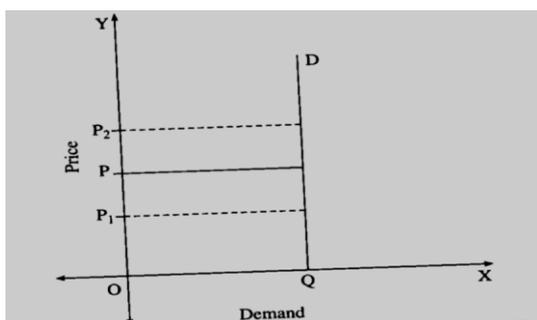
In the case of relatively elastic demand, the demand curve is a flatter line.

- (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.



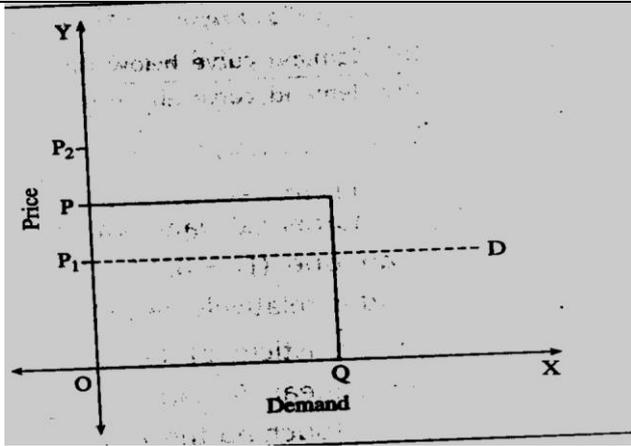
In the case of relatively inelastic demand, the demand curve is a steeper line.

- (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  $\infty$ . 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.