**Chapter- Elasticity of Demand**

Q 1. Price elasticity of demand for flowers and toys are respectively (-) 0.9 and (-) 0.5. Demand for which one is more elastic and Why?

Q 2. Differentiate between law of demand and price elasticity of demand.

Q 3. What is the price elasticity of demand for following demand curves:

(i) Straight line demand curve parallel to X-axis;

(ii) Straight line demand curve parallel to Y-axis.

Q 4. State with reasons, whether the following items will have elastic or inelastic demand: (i) Matchbox; (ii) Coke; (iii) Medicines; (iv) NCERT Textbook; (v) Electricity; (vi) Cigarettes; (vii) Butter for a poor Person.

Q.5. The price of a commodity X increases by 20%, as a result, the quantity demanded falls to zero. Calculate coefficient of price elasticity of demand. Comment upon the likely shape of the demand curve.

Q.6. The price of a commodity X decreases by 10%, as a result, the quantity demanded doubles. Calculate coefficient of price elasticity of demand. Comment upon the likely shape of the demand curve.

Q.7. Distinguish between elastic demand and inelastic demand.

Q 8. The price elasticity of demand for good X is known to be twice that of good Y. price of X falls by 5% while that of good Y rises by 5%. What is the percentage change in the quantities demanded of X and Y?

Q 9. The price elasticities of demand for goods X and Y are known to be 1 and 2 respectively. Price of X rises by 5% while that of good Y falls by 5%. What are the percentage changes in the quantities demanded of X and Y?

Q 10. The demand for goods X and Y have equal price elasticity. The demand of X rises from 100 units to 250 units due to a 20 per cent fall in its price. Calculate the percentage rise in demand of Y, if its price falls by 8 per cent.

Q 11. The price elasticity of demand of good X is half the price elasticity of demand of Good Y. A 25% rise in the price of good Y reduces its demand from 400 units to 300 units. Calculate percentage rise in demand of good X when its price falls from ₹ 10 to ₹ 8 per unit.

Q 12. The percentage change in demand is three times the percentage change in price. If original demand was 30 units was 30 units at the price of ₹ 7 per unit, then calculate the price elasticity of demand, given price increased by 10%. Indicate whether the demand is elastic or not. Also calculate the new quantity demanded.

Q 13. In case of commodity 'B', the ratio of change in price (∆P) to original price (P) is (-) 0.4. If price elasticity of demand is (-) 0.5, calculate the percentage change in quantity demanded.

Q 14. If ratio of change in quantity (∆Q) to original quantity (Q) is 0.5 and elasticity of demand is (-) 1.25, calculate the percentage change in price.

Q 15. If $\frac{ΔQ}{Q} $= -0.6 and price elasticity is (-) 0.75, calculate the percentage change in price. Also calculate the new expenditure if initial expenditure was ₹ 500 at the price of ₹ 20.

Q 16. The demand function of commodity 'X' is given as: Qx = 20 - 2Px. Calculate its price elasticity of demand when price falls from ₹ 5 to ₹ 3.

Q 17. The demand for commodity 'A' rises by 20% due to fall in price by ₹ 2 from the original price of ₹ 8.

(i) Calculate elasticity of demand by 'Percentage Method'.

(ii) Whether demand of 'A' is elastic or inelastic? Give reason for your answer.

iii) What will be the shape of demand curve of A?

(iv) If new demand of commodity 'A' is 84 units, then calculate its original demand.

Q 18. If the price of X is ₹ 2 and the elasticity of demand is 0.4, how much will a 10 percent reduction in quantity demanded increase the price? If the new quantity demanded is 9 units, will the total spending on X rise? If so, by what percentage?

Q 19. When price of a good is ₹ 7 per unit, a consumer buys 12 units. When price falls to ₹ 6 per unit, he spends ₹ 72 on the good. Calculate price elasticity of demand by using the percentage method.

Q 20. The demand curve for the commodity is given as Dx = 20 - 2P. If slope of the demand curve is (-2), calculate price elasticity of demand for the commodity when the p price of the commodity is ₹ 5 per unit.

Q 21. The demand curve of a commodity is expressed as Dx = 40 - 5P. If slope of the demand curve is given to be (-2), calculate price elasticity of demand for the commodity when demand is 20 units.

**Answers**

Ans 1. Demand for flowers is more elastic as with 1% fall in price of flowers, its demand rises by 0.9%. However, in case of toys, 1% fall in price raises the demand by just 0.5%.

Ans 2. (i) Law of demand states the inverse relation between price of a commodity and its quantity demanded, assuming no change in other factors. On the other hand, price elasticity of demand indicates the rate of change in quantity demanded of the commodity due to change in its price.

(ii) Law of Demand reflects the direction of change in demand, whereas, price elasticity of demand measures the magnitude of change in demand.

Ans 3. The price elasticity of demand in the following cases will be: (i) Perfectly Elastic Demand; (ii) Perfectly Inelastic Demand.

Ans 4. (i) Matchbox has inelastic demand as consumer has to spend a very small proportion of his income.

(ii) Coke has elastic demand as it has number of substitutes.

(iii) (Medicines have inelastic demand as their consumption cannot be postponed.

(iv) NCERT Textbook has inelastic demand as it is a necessity item.

(v) Electricity has elastic demand as it can be put to several uses.

(vi) Cigarettes have inelastic demand as its consumers are habituated.

(vii) Butter for a poor person has elastic demand as it is a luxury item for the poor person.

Ans 5. Elasticity of Demand (Ed)= $\frac{Percentage Change in Quantity Demanded }{Percentage Change in Price}$ = $\frac{100\%}{20\%}$ = 5

Shape of demand curve is downward sloping from left to right. As demand is highly elastic, demand curve will be flatter (away from origin).

Ans 6. Elasticity of Demand (Ed) = $\frac{Percentage Change in Quantity Demanded }{Percentage Change in Price}$ = $\frac{100\%}{10\%}$ = 10

Shape of demand curve is downward sloping from left to right. As demand is highly elastic, demand curve will be flatter (away from origin).

Ans 7. When the percentage change in quantity demanded is more than the percentage change in price, then the demand for the commodity is said to be elastic. The coefficient of price elasticity of demand in this case is greater than unity, i.e., Ed>1.

On the other hand, when the percentage change in quantity demanded is less than the percentage change in price, then the demand for the commodity is said to be inelastic. The coefficient of price elasticity is less than unity, i.e., Ed <1.

Ans 8. Quantity of X will rise by 10%; Quantity of Y will fall by 5%.

Ans 9. Quantity of X will fall by 5%; Quantity of Y will rise by 10%.

Ans 10. Demand for good Y will rise by 60%.

Ans 11. Demand for good X will rise by 10%.

Ans 12. Price Elasticity of demand (Ed) = (-) 3; Demand is highly elastic as Ed > 1; New Quantity = 21 units.

Ans 13. Percentage change (rise) in Quantity demanded = 20%.

Ans 14. Percentage change (fall) in Price = 40%

Ans 15. Percentage change (rise) in Price = 80%; New Expenditure = ₹ 360

Ans 16. Ed = (-) 1 (Demand is unitary elastic as Ed = 1)

Ans 17. (i) Ed = (-) 0.8 or 0.8

(ii) Demand of ‘A’ is inelastic as elasticity of demand (0.8) is less than 1.

(iii) The demand curve of ‘A’ will be a Downward Sloping Steeper Curve. It will be downward sloping due to inverse relationship between price and quantity demanded. It will be a steeper curve as demand is inelastic.

(iv) x or original demand = 70 units

Ans 18. Percentage increase in total spending = 12.5%

Ans 19. Price Elasticity of Demand (Ed) = 0; The demand curve is parallel to the Y-axis.

Ans 20. Elasticity of demand (Ed) = (-) 0.25

Ans 21. Elasticity of demand (Ed) = (-) 0.10