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Class 11 commerce Sub. ECO/A Date 26.11.2020

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Elasticity of Demand(H.W)

Q17. What do you mean by a normal good?

Ans. A normal good is one whose consumption rises with rise in income of the consumers and vice versa. For example, wheat, rice. There is direct relationship between income and demand.

Q18. What do you mean by an 'inferior good'? Give some examples.

Ans. An inferior good is one whose consumption falls with rise in income of the consumers and vice versa. For example, low quality food items like ink coarse cereals. There is inverse relationship between income and demand.

Q19. What do you mean by substitutes? Give examples of two goods which are substitutes of each other.

Ans. Substitute goods are those goods which have similar prices and technology. For example, like ink pen or ball pen, tea or coffee, etc.

In case of substitute goods, the demand for a commodity falls with a fall in the price of other commodities. A fall in the price of tea will increase the demand for tea and will decrease the demand for coffee.

Q20. What do you mean by complements? Give examples of two goods which are complements of each other.

Ans. Complementary are those goods which are jointly needed to satisfy human want. For example, car and petrol, pen and ink, tea and sugar, etc.

In case of complementary goods, the demand for a commodity rises with the fall in the price of complementary goods. If the price of the petrol falls, with it demand for cars will increase.

Q21. Explain price elasticity of demand.

Ans. Price elasticity of demand measures responsivenss of demand to a change in price of the commodity. e_D is measured by the formula:

$$e_D = -\frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$$

The coefficient of price elasticity of demand is always negative showing inverse relationship between price and quantity demanded.

Q22. Consider the demand for a good. At price ₹ 4, the demand for the good is 25 units. Suppose price of the good increases to ₹ 5, and as a result, the demand for the good falls to 20 units. Calculate the price elasticity.

Ans. $P = ₹\ 4, \quad Q = 25$ units $\Rightarrow P_1 = ₹\ 5, \quad Q_1 = 20$ units

$\Delta P = ₹\ 1\ \Delta Q = 5$ units $\Rightarrow e_D = \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$

$= \frac{5}{1} \cdot \frac{4}{25} = \frac{4}{5} = 0.8$

Q23. Consider the demand curve $Q = 10 - 3P$. What is the elasticity at price $\frac{5}{3}$?

Ans. Let $Q = 10 - 3P$.

when $P = \frac{5}{3}$, $Q = 10 - 3 \times \frac{5}{3} = 5$

Differentiating Q with respect to P, we get: $\frac{\Delta Q}{\Delta P} = -3$

We know,

$$e_D = -\frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q} = -3 \cdot \frac{5/3}{5} = -3 \times \frac{5}{3} \times \frac{1}{5} = |-1| = 1$$

Q24. Suppose the price elasticity of demand for a good is – 0.2. If there is a 5 % increase in the price of the good, by what percentage will the demand for the good go down?

Ans. Given: $e_D = -0.2$, % increase in price = 5%.

We know,

$$e_D = \frac{\text{\% change in quantity demanded}}{\text{\% change in price}}$$

or $0.2 = \frac{\text{\% change in quantity demanded}}{5}$

$\therefore$ Percentage fall in demand = $0.2 \times 5 = 1\%$