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Semester V (B.Tech)

Er. No. 20183088

Academic Year: 2022-23

Jaypee University of Engineering & Technology, Guna

T-2 (Odd Semester 2022)

21B14HS547 – CONCEPT OF ECONOMICS

Maximum Duration: 1 Hour 30 Minutes

Maximum Marks: 25

Notes:

1. This question paper has 05 questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).
4. Calculator is allowed.

		Marks	CO
Q1.	Consider the demand equation **Q = 25 - 3P,** where Q represents quantity demanded and P the selling price		CO1
(a)	Calculate the arc-price elasticity of demand when P1 = Rs 4 and P2 = Rs 3.	[2]	
(b)	What is the price elasticity of demand at the quantity that maximizes total revenue?	[3]	
Q2.	ABC Company specializes in parcel delivery. The demand equation is estimated to be where P is the price per parcel and Q is parcels delivered $P = 66Q^{-1/3}$		CO1
	The marginal cost of delivery is constant and equal to Rs 2 per parcel.		
(a)	What is the point-price elasticity of demand?	[2]	
(b)	Calculate the quantity at which profit is maximized.	[3]	
Q3.	The price and quantity demanded for a certain product is given	[5]	CO2

Price	14	13	12	16	15	22	17	18	19	20
Quantity	150	180	200	125	140	50	122	120	80	75

Use simple regression analysis, estimate demand as a linear function of price. From the equation, calculate the forecasted value at price = Rs 25.

Q4. Sales data for the product xyz is given. Determine the seasonal index and compute the forecasted demand for year 3. [5] CO2

Year	Quarter	Sales (Lakhs)	Year	Quarter	Sales (Lakhs)
1	1	54	2	1	43
1	2	32	2	2	23
1	3	43	2	3	41
1	4	34	2	4	38

Q5. Suppose that a firm's short-run production function has been estimated as where Q is units of output and L is labor hours. [5] CO2

$$Q = 600L + 2000L^2 - L^3$$

Determine the 3 stages of production by calculating required AP_L and MP_L for the given equation.