

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

B.Tech-III Semester (All Branches)

COURSE CODE (CREDITS): 25B11HS311(3)

MAX. MARKS: 25

COURSE NAME: Economics

COURSE INSTRUCTORS: TGM, BLK

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculators is allowed.

Q.No	Question	CO	Marks																											
Q1	A biologist assumes that there is a linear relationship between the amount of fertilizer supplied to tomato plants and the subsequent yield of tomatoes obtained. Eight tomato plants of the same variety were selected at random and treated, weekly, with a solution in which x (grams of fertilizer) was dissolved in a fixed quantity of water. The yield y (kgs of tomatoes) was recorded. <table><tr><th>Plant</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th></tr><tr><td>x</td><td>1.0</td><td>1.5</td><td>2.0</td><td>2.5</td><td>3.0</td><td>3.5</td><td>4.0</td><td>4.5</td></tr><tr><td>y</td><td>3.9</td><td>4.4</td><td>5.8</td><td>6.6</td><td>7.0</td><td>7.1</td><td>7.3</td><td>7.7</td></tr></table> a) Calculate the equation of the least squares regression line. b) Estimate the yield of a plant treated, weekly, with 3.2 grams of fertilizer.	Plant	A	B	C	D	E	F	G	H	x	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	y	3.9	4.4	5.8	6.6	7.0	7.1	7.3	7.7	2	4+1
Plant	A	B	C	D	E	F	G	H																						
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y	3.9	4.4	5.8	6.6	7.0	7.1	7.3	7.7																						
Q2	What are random fluctuations in data and how are these dealt with at the time of forecasting?	2	2																											
Q3	"Coefficient of determination (R^2) and the t -test are both required to establish the strength of a regression relationship". Comment.	2	3																											
Q4	A consumer has an income of Rs. 350 per day. Price of X and Y is Rs. 5 and Rs. 7 respectively. Plot the budget line of the consumer. Also, estimate the slope coefficient.	3	3+2																											
Q5	a) Explain the concept of consumer equilibrium under the Cardinal Utility Approach using the Law of Equi-Marginal Utility. b) Why should two indifference curves not intersect each other?	3	3+2																											
Q6	a) Explain the difference between point and arc estimates of elasticity. b) Discuss the properties of indifference curves. Explain with the help of diagram, how consumer equilibrium is attained under ordinal or indifference curve approach.	3	2+3																											