JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech.-IV Semester (BI)

COURSE CODE (CREDITS): 18B11MA411(3) MAX. MARKS: 15

COURSE NAME: BIOSTATISTICS

COURSE INSTRUCTORS: Saurabh Srivastava MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

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

(c) Use of scientific calculator is allowed.

Q. No.	Question	CO	Marks
Q1	The following data were obtained in a study of the relationship between the weight and chest size of infants at birth. **Weight (kg)**: 2.25, 2.15, 4.41, 5.52, 3.21, 4.32, 2.37, 4.37, 3.71 **Chest Size (cm)**: 29.5, 26.3, 32.3, 36, 27.2, 27, 28.2, 30.3, 28.7 Calculate Karl Pearson's coefficient of correlation.	1	3
Q2	The amount of solid removed from a particular material when exposed to drying periods of different lengths are as follows: **x (hours)**: 4.3, 4.5, 4.7, 5.3, 5.6, 5.9 **y (grams)**: 13.2, 9.5, 10.5, 13.8, 12.3, 9.7 **a)** Fit a linear regression line. **b)** Estimate the amount of solid removed for drying period of 5 hours?	1	4
Q3	Estimate $Y(2.4)$ by fitting a least square quadratic curve to the following data: X: 1, 2, 3, 4 Y: 1.7, 1.8, 2.3, 3.2	1	3
Q4	Prove that arithmetic mean of regression coefficients is greater than or equal to the coefficient of correlation, whereas the geometric mean between the two regression coefficients is equal to the correlation coefficient.	1	2
Q5	Three students A, B and C are in a swimming race. A and B have the same probability of winning and each is twice as likely to win as C. Find the probability that B or C wins.	2	3