JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- FEB-2023

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

COURSE NAME: BIO STATISTICS

COURSE INSTRUCTORS: Dr. Saurabh Srivastava   MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets. Use of scientific calculator is allowed.

Q.1 Find the Karl Pearson's correlation coefficient between the grades of a class of 9 students of BI41 on T1 examination report (X) and on the T2 examination report (Y) in the course of Bio Statistics (18B11MA411) as follows:

Grades in T1 examination (out of 15)	12	11	9	13	10	7	8	13	8
Grades in T2 examination (out of 25)	20	18	17	15	16	10	9	20	18

(CO-1)[4]

Q.2 The following data are a result of an investigation as to the effect of reaction temperature X on percent conversion of a chemical process Y. Fit a simple linear regression model and use it to estimate percent conversion of a chemical process at $230°C$.

Observations	1	2	3	4	5	6
Temperature (°C), X	200	250	200	250	225	225
Conversion(%),Y	43	78	69	73	65	74

(CO-1)[3+1]

Q.3 Fit a second degree parabola for the following data using method of least squares for the total prescribed dose of the physical activity per day (X) and level of depression (Y) and plot the scatter diagram on your *answer sheet*.

Total prescribed dose of the physical activity per day (X)	1	2	3	4
Level of depression (Y)	1.1	1.5	1.8	1.2

(CO-1)[3+1]

Q.4 In a random experiment of rolling two identical and fair dice together, find the probabilities of getting:

(a) Maximum sum of the numbers.

(b) Minimum sum of the numbers.   (CO-1)[1.5+1.5]