(196)

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-VI Semester (CSE- AI & DS)

COURSE CODE (CREDITS):25B1WCI643 (3) MAX MARKS: 25

COURSE NAME: Statistical Analysis and Computing

COURSE INSTRUCTOR: Prof. Pardeep Kumar 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 calculator is allowed
(d) Write step by step answer of each question

Q.No	Question	CO	Marks
Q1	Prove that variance of a random variable X is $E[X^2] - (E[X])^2$ where E is Expectation.	CO 3	3
Q2	Suppose that three different teaching methods are tested on students and the test scores are given as under: Group: A — Scores: 85, 87, 90 Group: B — Scores: 78, 82, 80 Group: C — Scores: 88, 92, 91 Test if there is a significant difference between the teaching methods or not. Note: The F-critical for level of significance 0.05 and your computed degree of freedom is 5.14.	CO 4	5
Q3	Consider Binomial distribution for a random variable X and prove that the mean is np and variance is npq where n : number of trials of an experiment, p: success probability and q: failure probability.	CO3	5
Q4	Let the probability density function f(x) is given as under: $f(x)= 3x$ for $0<x<1$ and 0 otherwise. Find the moment generating function of f(x) and compute the mean, variance, skewness and kurtosis.	CO 3	7
Q5	Consider the marks of students in a class given as under: 40, 35, 42, 45, 48, 50, 52, 55, 60, 95 Use Inter- Quartile Range method to find out outlier in the given data. Also show the distribution in terms of quartile 1, quartile 2 and quartile 3 for the given data and outliers detected by you on real number scale.	CO 4	5