JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-V Semester (CSE AI-DS)

COURSE CODE (CREDITS): L-25B11CI51 (3) MAX. MARKS: 15

COURSE NAME: INTELLIGENT TECHNIQUES FOR PREDICTIVE DATA ANALYTICS

COURSE INSTRUCTOR: PRIYADARSHI 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 calculator is not allowed

Q.No	Question	CO	Marks
Q1	A) Please suggest some intelligent technique for predictive data analytics for forecasting and predicting buying behavior. B) Suggest a method to handle missing values for categorical features.	1	2+1
Q2	A university wants to classify students into "High Performance" and "Low Performance" groups using two features: Attendance (%) and Internal Assessment Marks. The data shows that students in the high-performance group generally have higher attendance and assessment marks. Answer the following questions. A) Explain how Linear Discriminant Analysis (LDA) can be used to classify a new student into one of the two performance groups. B) Mention the role of within-class variance and between-class variance in determining the LDA projection.	1	2+1
Q3	Apply the concept of Support Vector Machine to determine the hyperplane for classification of two input NAND gate.	2	3
Q4	Comment on the mathematical nature of Binary cross-entropy loss function for Logistic regression. Suggest a suitable optimization technique for finding the optimal value of the parameter.	2	2+1
Q5	A) Mention the significance of Information Gain in Decision Tree. B) Briefly, describe a technique for mitigating overfitting in Decision Tree Classifier.	2	1+2