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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-VI Semester (CSE/IT/BT)

COURSE CODE (CREDITS): ~~18B1WCI633~~ (2) 18B11B1611 MAX MARKS: 25

COURSE NAME: Machine Learning for Bioinformatics

COURSE INSTRUCTOR: KLK and Sandeep Kumar Patel 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 a calculator is allowed

MARCH-2026

Q.No	Question	CO	Marks
Q1	List the following: (1) Inputs to the ID3 algorithm, (2) Boundary cases about the dataset (do not ask for explanation from examiners).	3	4
Q2	**ID3 Numerical Problem Dataset** Give the expression for information gain and entropy first, and then systematically apply ID3 to the above dataset.	4	7
Q3	Draw a decision tree for the following Boolean expression: **A'B' + AB**	3	2

Example	SH	A1	A2	Result
1	High	Good	Yes	Pass
2	High	Good	No	Pass
3	High	Poor	Yes	Pass
4	Medium	Good	Yes	Pass
5	Medium	Poor	No	Fail
6	Low	Good	No	Fail
7	Low	Poor	Yes	Fail
8	Low	Poor	No	Fail

Q4	List the assumptions of Linear Regression and briefly describe them on the dataset given below x1 | x2 | x3 | y | y_pred 1 | 2 | -7 | 8 | 9 2 | 4 | -3 | 14 | 15 3 | 6 | -1 | 16 | 14 4 | 8 | 0 | 18 | 20 5 | 10 | 3 | 20 | 19	3	5
Q5	Formulate the linear regression model for the dataset provided in Q4. Derive the OLS closed-form expression. Compute the values of model parameters by the OLS closed-form expression.	4	7