Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – MARCH 2026

Date: 10- 03- 2026 **Time:** 09:30am – 11:00am

School: SOIS	**Program:** 4BCAAIML/DS	
Course Code: CSA2517	**Course Name:** MACHINE LEARNING ALGORITHMS	
Semester: IV	**Max Marks**: 50	**Weightage**: 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**
Marks	**12**	**14**	**14**	**10**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	What are features?	**2 Marks**	**L2**	**CO1**
2	What is encoding?	**2 Marks**	**L2**	**CO2**
3	Explain the difference between classification and regression in Machine Learning.	**2 Marks**	**L2**	**CO2**
4	Identify the use of Decision Tree algorithm.	**2 Marks**	**L3**	**CO3**
5	Show how the KNN algorithm works for classification.	**2 Marks**	**L3**	**CO3**

Part B

Answer the Questions. **Total Marks 40M**

6.		Describe Linear Regression for prediction. Explain its working principle, algorithmic steps, and illustrate with a suitable example.	10 Marks	L2	CO1
		Or			
7.		Discuss how Logistic Regression is used for classification with a suitable example. Explain the sigmoid function, decision boundary, and prediction process.	10 Marks	L2	CO1
8.		Classify different unsupervised learning techniques for clustering. Explain the algorithms, distance measures, and criteria used to form clusters.	10 Marks	L3	CO3
		Or			
9.		Illustrate the concept of dimensionality reduction. Compare different dimensionality reduction techniques and discuss their benefits and limitations.	10 Marks	L3	CO3
10.		Explain the importance of cross-validation in machine learning. Explain how it helps in model selection, performance estimation, and prevention of overfitting.	10 Marks	L2	CO2
		Or			
11.		Summarize the ethical issues related to data usage, model design, and decision-making in Machine Learning applications.	10 Marks	L2	CO2
12.		Examine the PCA algorithm used, steps involved, implementation, and evaluation of the model & Create a simple Machine Learning application using Python program.	10 Marks	L4	CO4
		Or			
13.		Analyze the basic Machine Learning workflow using Python. Explain each stage involved from data collection to model evaluation with suitable examples.	10 Marks	L4	CO4