

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)

III - B.Tech II-Semester Regular Examinations (BR23), April/May – 2026

MACHINE LEARNING (CSE)

Time: 3 hours

Max. Marks: 70

Question Paper consists of Part-A and Part-B
Answer ALL the question in Part-A and Part-B

PART-A (10X2 = 20M)

		Marks	CO	BL
1. a)	What is meant by Learning by Rote?	(2M)	CO1	2
b)	What are the different types of data used in ML?	(2M)	CO1	2
c)	Explain proximity measures.	(2M)	CO2	3
d)	Demonstrate classifier performance?	(2M)	CO2	3
e)	Define a Decision Tree?	(2M)	CO3	2
f)	What are impurity measures?	(2M)	CO3	2
g)	What is meant by kernel trick?	(2M)	CO4	2
h)	Demonstrate Multi-Layer Perceptron (MLP)?	(2M)	CO4	3
i)	Define fuzzy C-means clustering.	(2M)	CO5	3
j)	Illustrate rough clustering?	(2M)	CO5	3

PART-B (5X10 = 50M)

2a.	Explain the stages in Machine Learning.	(5M)	CO1	2
b.	Describe different Machine Learning paradigms with examples.	(5M)	CO1	2
OR				
3	Explain the concepts of data representation and model selection in Machine Learning with examples.	(10M)	CO1	2

4.	Describe the K-Nearest Neighbor (KNN) classifier in detail. Explain the algorithm with a suitable example.	(10M)	CO2	3
(OR)				
5.	Discuss the Radius Distance Nearest Neighbor algorithm and compare it with the K-Nearest Neighbor algorithm	(10M)	CO2	3

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6.	Discuss the Naive Bayes Classifier (NBC) and explain the assumption of class conditional independence.	(10M)	CO3	2
(OR)				
7.	Explain the Random Forest algorithm and its advantages over decision trees.	(10M)	CO3	3
(OR)				
8.	Explain the concept of Support Vector Machines (SVM) and discuss how it works for classification.	(10M)	CO4	3
(OR)				
9.	Explain the Back propagation algorithm used for training neural networks.	(10M)	CO4	3
(OR)				
10.	Explain agglomerative clustering and divisive clustering with suitable diagrams.	(10M)	CO5	3
(OR)				
11.	Describe the K-Means clustering algorithm with steps and an example.	(10M)	CO5	3

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