BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)
II - B.Tech II-Semester Regular Examinations (BR23), Apr/May - 2025
MACHINE LEARNING (AI&ML)

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 are the different stages in Machine Learning?	(2M)	CO1	BL1
	b)	Explain different types of data in Machine Learning?	(2M)	CO1	BL2
	c)	What is proximity measure? Give an example.	(2M)	CO2	BL2
	d)	What is the basic principle behind the K-Nearest Neighbor (KNN) algorithm?	(2M)	CO2	BL2
	e)	Explain Non-Metric similarity function with example.	(2M)	CO3	BL3
	f)	Differentiate Classification and Regression with example	(2M)	CO3	BL2
	g)	Define Bayes Theorm with example.	(2M)	CO4	BL1
	h)	What is meant by SVM?	(2M)	CO4	BL2
	i)	What is Aglomerative Clustering?	(2M)	CO5	BL1
	j)	Explain K-Means Algorithm with example?	(2M)	CO5	BL2

PART–B (5X10 = 50M)

2a.	Explain different Stages in Machine Learning?	5(M)	CO1	BL2
b.	Explain about Matching in Machine Learning?	5(M)		

(OR)

3a.	What is Machine Learning? Explain Paradigms in Machine Learning	5(M)	CO1	BL2
b.	Explain Model Evaluation in Machine Learning	5(M)		

4a.	Describe the "K-Nearest Neighbor Classifier" algorithm with a simple example	5(M)	CO2	BL3
b.	Write about Euclidean, Manhattan and cosine Distances with examples.	5(M)		

(OR)

5a.	What is Regression and explain the performance of Regression Algorithms	5(M)	CO2	BL3
b.	Explain KNN Regression Method with example.	5(M)		

6a.	Explain the concept of Decision Trees for Classification.	5(M)	CO3	BL2
b.	Discuss the various "Impurity Measures" used in building Decision Trees. Compare and contrast the different measures, highlighting their strengths and weaknesses.	5(M)		

(OR)

7a.	Explain about Naive Bayes Classifier	5(M)	CO3	BL2
b.	Describe the "Bias-Variance Trade-off" in the context of Decision Trees.	5(M)		

8	Explain the concept of "Support Vector Machines (SVMs)." Discuss the idea of maximizing the margin and its importance	10(M)	CO4	BL3

9	Explain the concepts of "Linear Regression" and "Logistic Regression." Compare and contrast the two	10(M)	CO4	BL3
10a	Explain about K-Means Clustering with example.	5(M)	CO5	BL3
b.	Explain about Matrix Factorization with example	5(M)		

(OR)

11a.	Explain the concept of "Clustering" in Machine Learning. Discuss the different types of clustering techniques	5(M)	CO5	BL3
b.	Explain the concepts of "Soft Partitioning" and "Fuzzy C-Means Clustering." Discuss the differences between hard and soft clustering	5(M)		

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