Code No: **R20A6601** **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Supplementary Examinations, June/July 2024

Machine Learning

CSE (AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I

1	***A***	Evaluate the different feature normalization methods, and discuss their impact on machine learning model performance.	**[7M]**
	B	Analyze the role of feature selection in machine learning.	**[7M]**
		OR	
2	***A***	Examine the different underfitting problems in machine learning.	**[7M]**
	B	Implement a variety of evaluation metrics for machine learning models.	**[7M]**

SECTION-II

3	***A***	Explain the K-Nearest Neighbors (KNN) classification algorithm.	**[7M]**
	B	Implement the KNN classification algorithm.	**[7M]**
		OR	
4	***A***	Describe the difference between simple linear regression and multiple linear regressions.	**[7M]**
	B	Explain with example about support vector machine.	**[7M]**

SECTION-III

5	***A***	Explain about Bayes Theorem with suitable example.	**[7M]**
	B	Discuss the advantages and disadvantages of different model validation techniques.	**[7M]**
		OR	
6	***A***	Explain the bias-variance tradeoff in machine learning.	**[7M]**
	B	Examine the different types of activation functions used in neural networks, and explain their advantages and disadvantages.	**[7M]**

SECTION-IV

7	***A***	Discuss the different ways to initialize the weights of a neural network.	**[7M]**
	B	Illustrate the different ways to transfer learning in neural networks.	**[7M]**
		OR	
8	***A***	Discuss the different hyper parameters that can be tuned in the back propagation algorithm.	**[7M]**
	B	Discuss the different factors that affect the bias and variance of a machine learning model.	**[7M]**

SECTION-V

9	***A***	Explain about k-means clustering.	**[7M]**
	B	Define reinforcement learning? And explain about it.	**[7M]**
		OR	
10	***A***	Explicate the different components of an MDP, such as states and transition probabilities.	**[7M]**
	B	Explain the different types of clustering algorithms, such as, Gaussian mixture models, and expectation-maximization.	**[7M]**

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