

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech I Semester Supplementary Examinations, June/July 2024**Machine Learning****(B.Tech-AIDS)**

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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.

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]
