

CMR ENGINEERING COLLEGE: : HYDERABAD**UGC AUTONOMOUS****III-B.TECH-II-Semester End Examinations (Supply) - December- 2025****INTRODUCTION TO MACHINE LEARNING****(AI&DS)****[Time: 3 Hours]****[Max. Marks: 70]****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(20 Marks)**

1. a) Define well-defined learning problems. [2M]
- b) Define decision tree learning. [2M]
- c) What is perceptron? [2M]
- d) How to evaluate hypothesis? [2M]
- e) Where we use concept learning in Machine learning? [2M]
- f) What is sample complexity in hypothesis space? [2M]
- g) What is K-nearest neighbour learning algorithm? [2M]
- h) Define case based learning. [2M]
- i) What is reinforcement learning? [2M]
- j) Define Artificial Neural Network (ANN).. [2M]

PART-B**(50 Marks)**

2. Explain about candidate elimination algorithm with suitable example. [10M]
- OR**
3. Demonstrate decision tree learning algorithm with advantages and disadvantages. [10M]
4. Discuss about gradient descent and delta rule in Back propagation algorithm. [10M]
- OR**
5. What is multilayer network? Explain the importance in artificial neural networks. [10M]
6. Explain naïve Bayes classifier and Bayesian belief network in machine learning. [10M]
- OR**
7. Discuss about computational learning theory and how is used in hypothesis learning space. [10M]
8. List and explain models of evolution and learning with example. [10M]
- OR**
9. Explain Radial basis function networks in instance based learning. [10M]
10. Construct Convolutional Network (CNN) and explain how it is used in deep learning. [10M]
- OR**
11. Explain types of Reinforcement learning along with pros and cons. [10M]
