

Code No.: CY701PC/DS701PC

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H.T.No.

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CMR ENGINEERING COLLEGE: : HYDERABAD

UGC AUTONOMOUS

IV–B.TECH–I–Semester End Examinations (Supply) - April- 2025

MACHINE LEARNING

(Common for CSD, CSC)

[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) What are the types of Machine learning algorithms? [2M]
- b) What are the remarks of version space in candidate elimination algorithm? [2M]
- c) Define artificial neural network. [2M]
- d) Identify formulas for Calculating a Confidence Interval. [2M]
- e) What are the advantages of KNN Algorithm? [2M]
- f) What is regression? [2M]
- g) Write any four applications of genetic algorithm. [2M]
- h) What are the advantages of reinforcement learning? [2M]
- i) Define inductive learning. [2M]
- j) What is explanation-based learning and how is it useful? [2M]

PART-B

(50 Marks)

- 2.a. Explain about the issues in decision tree learning. [5M]
- b. Illustrate in detail about various categories of splitting the node in decision tree construction. [5M]

OR

3. What is the candidate elimination algorithm? Explain with example. [10M]
4. Present the Back propagation algorithm for feed forward networks and explain each step in it. [10M]

OR

5. Explain how to estimate hypothesis accuracy with examples. [10M]
6. Explain the Maximum Likelihood Hypotheses for predicting probabilities. [10M]

OR

7. State and prove Bayes theorem. [10M]
8. Explain the Q-learning with suitable example. [10M]

OR

9. Discuss about First-Order rule learning in detail. [10M]
10. Discuss about the Explanation-Based Learning of Search Control Knowledge. [10M]
11. What is hypothesis and inductive bias? Explain with examples. [10M]
