

Code No.: CY701PC/DS701PC

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**CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS**

IV-B.TECH-I-Semester End Examinations (Regular) - November- 2023

**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) Define Machine Learning? [2M]
- b) List the basic design issues in Machine Learning. [2M]
- c) What are the remarks on the BACK-PROPAGATION algorithm? [2M]
- d) Define Perceptron? [2M]
- e) What is maximum likelihood in ML classification? [2M]
- f) State Bayes theorem? [2M]
- g) What are the First Order rules for Classifying web pages? [2M]
- h) How do you use Reinforcement Learning? [2M]
- i) What are the main properties of PROLOG-EBG algorithm? [2M]
- j) Differentiate between Inductive and Analytical Learning. [2M]

PART-B

(50 Marks)

2. Discuss about the basic Decision Tree Learning algorithm. [10M]
- OR**
3. Explain the Find-S: Finding a Maximally Specific Hypothesis in detail. [10M]
- 4.a) Explain how to estimate hypothesis accuracy. [5M]
- b) Illustrate the representation of Neural Networks. [5M]
- OR**
5. List and Explain advanced topics in Artificial Neural Networks? [10M]
- 6.a) How does K-NN work? [5M]
- b) State and Explain Bayesian Belief Network. [5M]
- OR**
7. Illustrate the Locally Weighted Linear Regression. [10M]
8. Explain about the hypothesis space search in Genetic Algorithm. [10M]
- OR**
9. State and Explain Genetic Algorithm with example. [10M]
10. Illustrate Inductive-Analytical approaches to learning. [10M]
- OR**
11. Explain how to initialize the hypothesis by using Prior Knowledge. [10M]
