

Code No.: AD701PC

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

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

**INTRODUCTION TO PREDICTIVE ANALYTICS**

**(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) What is Supervised Learning? [2M]
- b) Define Multiple Regression. [2M]
- c) Compare model selection and model assessment. [2M]
- d) Define Bayesian Information Criterion (BIC). [2M]
- e) Distinguish between Regression Tree and Classification tree. [2M]
- f) What is Numerical Optimization? [2M]
- g) Define Support Vector Machine. [2M]
- h) What is Back propagation? [2M]
- i) Differentiate between Combinatorial algorithm, mixture modeling and mode seeking. [2M]
- j) Write about Market Basket analysis. [2M]

**PART-B**

**(50 Marks)**

2. Explain Linear Regression models and Least Squares with example. [10M]
- OR**
3. Discuss about Fitting Logistic Regression models with example. [10M]
4. Explain about Optimism of the training error rate with example. [10M]
- OR**
5. Discuss about Bias Variance tradeoff in detail. [10M]
6. Describe Exponential loss and ADA Boost. [10M]
- OR**
7. Discuss about California housing example in detail. [10M]
8. Discuss about some issues in training Neural Networks. [10M]
- OR**
9. Explain K-Nearest Neighbor classifier with Image Scene Classification example. [10M]
10. Explain Apriori Algorithm with example. [10M]
- OR**
11. Discuss about Hierarchical Clustering in detail. [10M]

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