

Code No.: AD701PC

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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) - December- 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 Linear Regression? [2M]
- b) Write about Subset Selection. [2M]
- c) Define Bootstrap Method. [2M]
- d) Evaluate expected test error. [2M]
- e) Compare Classification tree and Regression tree. [2M]
- f) Why Exponential Loss? Explain. [2M]
- g) What is Neural Network? [2M]
- h) Define K Nearest Neighbor Classifier. [2M]
- i) What is Cluster Analysis? [2M]
- j) Distinguish between principal curves and surfaces. [2M]

PART-B

(50 Marks)

2. Explain Least squares and Nearest Neighbors in detail. [10M]
- OR**
3. Describe Perceptron Learning algorithm with example. [10M]
4. Explain about Cross Validation in detail. [10M]
- OR**
5. Describe the estimates of In-sample Prediction Error. [10M]
6. Explain about Numerical Optimization in detail. [10M]
- OR**
7. Discuss about Demographic data example in detail. [10M]
8. Explain about SVM for classification in detail. [10M]
- OR**
9. Discuss about Fitting Neural Networks. [10M]
10. Explain K-means Clustering algorithm. [10M]
- OR**
11. Discuss about Principal components in detail. [10M]
