

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]
