Code No: **20CO5T02**

R20

III B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2022

MACHINE LEARNING

(CSO)

Time: 3 Hours **Max. Marks: 70**

Note : Answer **ONE** question from each unit **(5 × 14 = 70 Marks)**

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UNIT-I

1. a) Differentiate supervised learning and unsupervised learning. [7M]
   b) Describe the applications of machine learning in any three different domains. [7M]

(OR)

2. a) Describe the perspectives and issues in Machine Learning. [7M]
   b) Explain about Grouping and Grading models. [7M]

UNIT-II

3. a) Write ID3 decision tree algorithm and explain with suitable example. [7M]
   b) Discuss different issues in decision tree learning. How are they overcome. [7M]

(OR)

4. a) Explain linear regression model. What are the drawbacks of using linear regression model. [7M]
   b) What is Sigmoid function? Give an example of logistic regression application in practice. [7M]

UNIT-III

5. a) Naive Bayes classification could depend on Maximum-a-Posteriori or Maximum-Liklihood criteria. What is the difference between the two. [7M]
   b) Describe K- nearest neighbor algorithm. Elaborate why it is called instance based learning. [7M]

(OR)

6. a) What is the goal of support vector machine? How to compute the margin. [7M]
   b) Explain the single perceptron with its learning algorithm. [7M]

UNIT-IV

7. a) With an example discuss dendogram representation for hierarchical clustering of data objects. [7M]
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b) Use K Means clustering to cluster the following data into two groups. Assume cluster centroid are m1=2 and m2=4. The distance function used is Euclidean distance.{ 2, 4, 10, 12, 3, 20, 30, 11, 25 }. [7M]

(OR)

8. a) Write down the major differences between K-means clustering and hierarchical clustering. [7M]

b) Demonstrate k-medoids partitioning algorithm with example. [7M]

UNIT-V

9. a) How stacking works? [7M]

b) What are the similarities between bagging and boosting. [7M]

(OR)

10. a) Describe the random forest algorithm to improve classifier accuracy. [7M]

b) Discuss the advantageous and disadvantageous of boosting model. [7M]

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