R17 Regulation *Subject code:1P7EC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech VII Semester Supplementary Examinations, July 2022

Machine Learning

(CSE)

Maximum Marks: 70 Date:05.07.2022 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks **(10x2M=20 Marks)**

1 List various machine learning applications.
2 Define multiple regression with an example.
3 State Occam razor principle.
4 Tell about cross validation and overfitting.
5 Discuss soft margin in SVM.
6 State how Lagrange Multiplier in optimization.
7 What is Lazy learner algorithm? Give example.
8 Differentiate between Supervised and Unsupervised learning.
9 What is induction based learning?
10 What is PCA in machine learning?

Part-B

Answer All the following questions. **(10MX 5=50Marks)**

11 A. State and explain machine learning based approach.
B. Devise how linear regression is used in machine learning. [5+5]

OR

12 A. Discuss with an example logistic regression.
B. What is PAC learning used for? Discuss. [5+5]

13 A. Analyze decision tree based learning with a sample dataset.
B. Draw the architecture of Neural Network Learning model and explain. [5+5]

OR

14 A. Define back propagation and state its significance with the help of diagram.
B. How does Multi layer neural network learn? Explain with a suitable example. [5+5]

15 A. State and explain Bayes theorem.
B. Define classification and explain how Navie Bayes classifier is used in ML. [5+5]

OR

16 A. Illustrate how Markov model based learning is used in machine learning.
B. What is SVM? Explain. [5+5]

17 A. Explain with an example various instance based learning techniques.
B. Explain how K-means clustering is used in unsupervised learning. [5+5]

OR

18 A. Illustrate with an example how k-nearest neighborhood clustering is used in machine learning.
B. Explain Gaussian mixture density function. [5+5]

19 A. What is GA in machine learning. Discuss in brief.
B. Discuss in brief how dimensionality reduction is done in PCA. [5+5]

OR

20 A. Write a short note feature selection technique used in PCA.
B. How is PCA different from feature selection? Justify. [5+5]