R20 Regulation *Subject code:3P5GD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, June/July 2023

INTRODUCTION TO MACHINE LEARNING

(CSE(AI & ML))

Maximum Marks: 70 Date:01.07.2023 *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 (10 X 2 Marks=20 Marks)

1 Mention the issues in machine learning.
2 What is specific hypothesis in machine learning?
3 Where decision tree is used in machine learning?
4 List out three types of learning in neural network.
5 Define Bayesian principle.
6 What is nearest Neighbor in ML?
7 What are the first order rules in machine learning?
8 Define Prolog EBG.
9 What is inductive analytical approach?
10 Give the three main components of a reinforcement learning function.

Part-B

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

11 Define concept learning. Explain the task of concept learning. (10 Marks)

OR

12 (a) Explain with example of Find-S algorithm. (5 Marks)
(b) Explain with example of Candidate Elimination algorithm. (5 Marks)

13 Define decision tree learning. List and explain appropriate problems for decision tree learning. (10 Marks)

OR

14 (a) Define artificial neural network. Explain biological learning systems. (5 Marks)
(b) Describe the characteristics of back propagation algorithm. (5 Marks)

15 List and explain the features of Bayesian learning methods. (10 Marks)

OR

16 (a) Explain Maximum likelihood and least squared error hypothesis. (5 Marks)
(b) Briefly explain k -Nearest Neighbor Learning. (5 Marks)

17 Explain how Sequential Covering Algorithms learns rule sets? (10 Marks)

OR

18 Illustrate FOIL algorithm of learning First-order rule. (10 Marks)

19 Describe in detail about Analytical approaches of Learning with suitable example. (10 Marks)

OR

20 (a) Write a note on Q-Learning. (5 Marks)

(b) Briefly describe reinforcement learning method with suitable example. (5 Marks)