R20 Regulation *Subject code:* **3E6EF**

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, February 2024

MACHINE LEARNING

(CSE)

Maximum Marks: 70 Date: 22.02.2024 **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)		CO	Bloom Tx
1	What are the perspectives and issues in machine learning?	CO1	L1
2	State the three types of concept learning.	CO1	L1
3	List out the advantage of decision tree.	CO2	L1
4	What is back propagation algorithm based on?	CO2	L1
5	State the complexity of Gibbs sampling.	CO3	L1
6	Why is locally weighted regression used?	CO3	L2
7	What are rule-based learning methods?	CO4	L1
8	Define FOIL algorithm.	CO4	L2
9	What are the three inductive methods in teaching?	CO5	L1
10	What is motivation in machine learning?	CO5	L1

Part-B

Answer All the following questions. (5X10M=50 Marks)			
11	A. What are the types of learning problems in machine learning? B. List and explain five main challenges of the machine learning. [5+5]	CO1	L1 L2
	OR		
12	A. Explain the general and specific hypothesis in machine learning. B. Discuss about inductive bias of decision tree. [5+5]	CO1	L2 L3
13	A. How do you find the maximally specific hypothesis? Give example. B. What are appropriate problems for decision tree learning? [5+5]	CO2	L3 L2
	OR		
14	A. What is back propagation in multilayer neural network? B. What is sampling in machine learning? [5+5]	CO2	L2
15	A. Explain the principle of naive Bayes. B. Define k-means clustering and how it works? [5+5]	CO3	L2 L3
	OR		

16	A. Describe Gibbs sampling algorithm. B. What is the difference between regression and locally weighted regression? [5+5]	CO3	L2
17	A. Explain sequential covering algorithms. B. Discuss about the tools for learning analytics. [5+5]	CO4	L2 L3
	OR		
18	A. Briefly discuss learning with domain theories in Prolog-EBG. B. What are the different types of discovery-based learning? [5+5]	CO4	L3 L2
19	A. Explain inductive and deductive learning methods. B. What are the three stages of inductive approach? [5+5]	CO5	L2
	OR		
20	A. What are the 4 main analytical models? Explain. B. Describe reinforcement learning and Q-learning. [5+5]	CO5	L2