



R20 Regulation

Subject code:3E6EF

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, December 2024

MACHINE LEARNING

(CSE)

Maximum Marks: 70

Date:04.01.2025

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 important objectives of machine learning?	1	L1
2	What are the basic design issues and approaches to machine learning?	1	L1
3	What is the representational power of perceptron's?	2	L1
4	How to compute expected value and variance of a random variable?	2	L1
5	What is Artificial Neural Network?	3	L1
6	In probably learning PAC stands for?	3	L1
7	How to use entropy as evaluation function?	4	L1
8	What is conditional Independence?	4	L1
9	What is Reinforcement Learning?	5	L1
10	Analytical methods provide what type of hypothesis?	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	Which disciplines have their influence on machine learning? Explain with examples. [10M]	1	L2
OR			
12	A) Contrast the hypothesis space search in ID3 and candidate elimination algorithm. [5M] B) Illustrate the impact of overfitting in a typical application of decision tree learning. [5M]	1	L2
13	What is a decision tree & discuss the use of decision tree for classification purpose with an example. [10M]	2	L2
OR			
14	Explain the basic decision tree learning algorithm. [10M]	2	L2
15	Draw the perceptron network with the notation. Derive an equation of gradient descent rule to minimize the error. [10M]	3	L2
OR			

16	Write an algorithm for back propagation algorithm which uses stochastic gradient descent method. Comment on the effect of adding momentum to the network. [10M]	3	L2
17	Describe the representation of hypotheses and algorithms used in this. [10M]	4	L2
	OR		
18	A) How rules are post pruned? Explain with an example. [5M] B) What is Q function? Write an algorithm for learning Q. [5M]	4	L2
19	Discuss the method of comparing two algorithms. Justify with paired to tests method. [10M]	5	L2
	OR		
20	Discuss the learning tasks and Q learning in the context of reinforcement learning. [10M]	5	L2