



R20 Regulation

Subject code:3P5HC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, December 2024

Machine Learning (CSE (DS))

Maximum Marks: 70

Date:31.12.2024

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 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 perceptron?	2	L1
4	What is Inductive bias?	2	L1
5	State Bayes theorem.	3	L1
6	Define KNN.	3	L1
7	What is analytical learning?	4	L1
8	Define first order learning rules.	4	L1
9	What is Reinforcement Learning?	5	L1
10	Define the sample error and true error.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)							CO	Bloom Tx	
11	Write candidate elimination algorithm. Apply the algorithm to obtain the version space for the training example. [10M]							1	L2
	Sl. No	Sky	Air temp	Humidity	Wind	Water	Forecast	Enjoy	
	1	Sunny	Warm	Normal	Strong	Warm	Same	Yes	
	2	Sunny	Warm	High	Strong	Warm	Same	Yes	
	3	Rainy	Cold	High	Strong	Warm	Change	No	
	4	Sunny	Warm	High	Strong	Cool	Change	Yes	
OR									
12	What do you mean by a well –posed learning problem? Explain the important features that are required to well –define a learning problem. [10M]							1	L2
13	Discuss how a multi-layer network learns using a gradient descent algorithm. [10M]							2	L2
OR									
14	A) Explain Decision tree representation with examples. [5M] B) Explain the methods for comparing the accuracy of two hypotheses. [5M]							2	L2

15	Illustrate Naïve Bayes classifier. [10M]	3	L2
	OR		
16	Illustrate Maximum likelihood hypothesis in detail. [10M]	3	L2
17	Explain Sequential covering algorithm in detail. [10M]	4	L2
	OR		
18	Explain FOIL with an example. [10M]	4	L2
19	Discuss the hypothesis space search in inductive- analytical approaches to learning. [10M]	5	L2
	OR		
20	What is Q function? Write an algorithm for learning Q. [10M]	5	L2