



B.Tech V Semester Regular/Supplementary Examinations, February 2024
INTRODUCTION TO MACHINE LEARNING
 (CSE (AI & ML))

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.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A								CO	Bloom Tx
All the following questions carry equal marks (10x2M=20 Marks)									
1	What is the concept of well-posed learning problems to a real-world scenario.							CO1	L2
2	What is version space?							CO1	L2
3	Write the issues in decision tree learning.							CO2	L2
4	What is perceptron?							CO2	L2
5	What is Navie Bayesian Classifier?							CO3	L2
6	Write about Radial Basis Functions.							CO3	L2
7	What is Gibbs Algorithm?							CO4	L2
8	Write differences between an analytical learning and inductive learning.							CO4	L2
9	What is Reinforce learning?							CO5	L2
10	What is Q Learning							CO5	L2
Part-B									Bloom Tx level
Answer All the following questions. (5X10M=50Marks)									
11	Write Find-S algorithm to find a maximally specific hypothesis. [10M]							CO1	L3
	Ex	sky	air temp	humidity	wind	water	forecast	enjoy sport	
	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	Apply the candidate elimination algorithm to a given set of examples. Discuss how the algorithm iteratively refines the hypothesis space. [10M]							CO1	L3

	Ex	sky	air temp	humidity	wind	water	forecast	enjoy sport		
	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		
13	Explain decision tree learning algorithms with an example [10M]								CO2	L2
	OR									
14	Apply the back propagation algorithm to a neural network with multiple layers. Discuss how the weights are adjusted during the training process and its impact on the network's performance. [10M]								CO2	L3
15	Explain the Naïve Bayes classifier with an example. [10M]								CO3	L2
	OR									
16	Explain K-nearest Neighbor learning with example. [10M]								CO3	L2
17	Apply the FOIL algorithm to learn sets of first-order rules from examples. Discuss how FOIL deals with the trade-off between specificity and coverage. [10M]								CO4	L3
	OR									
18	Discuss Sequential Covering Algorithm[10M]								CO4	L2
19	Explain reinforcement learning with an example. [10M]								CO5	L2
	OR									
20	Explain inductive-analytical approaches to learning. [10M]								CO5	L2