CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B. Tech. VII Semester Regular End Examinations, November-2023
Machine Learning
Common to CSM &CSD

Time: 3 Hours   Max. Marks: 70

Note
i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	Why prefer short Hypothesis?	02	CO1	L1
	b	List out the issues in Decision Tree Learning.	02	CO1	L1
	c	Define increment gradient descent.	02	CO2	L1
	d	What is standard deviation?	02	CO2	L1
	e	Define Probability density function.	02	CO3	L1
	f	State Bayes theorem	02	CO3	L1
	g	Short notes on Uniform crossover.	02	CO4	L1
	h	State Two-point crossover	02	CO4	L1
	i	What is the essential difference between analytical and inductive learning methods?	02	CO5	L1
	j	What is inductive Bias in explanation-based learning?	02	CO5	L1

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2		Discuss in detail about candidate-elimination learning algorithm.	10	CO1	L2
		OR			
3		Briefly explain the need of inductive bias in Decision Tree Learning.	10	CO1	L2
4		Illustrate the Back Propagation Algorithm.	10	CO2	L2
		OR			
5	a	Explain in detail about Gradient Descent Algorithm.	05	CO2	L2
	b	Short notes on Binomial Distribution.	05	CO2	L2
6		Explain the Maximum Likelihood Hypotheses for predicting	10	CO3	L2

probabilities.

OR

7	a	Explain the Mistake Bound for the FIND-S Algorithm.	05	CO3	L2
	b	Elaborate the Distance-Weighted Nearest Neighbor Algorithm.	05	CO3	L2
8	a	Demonstrate the Baldwin Effect.	04	CO4	L2
	b	Apply inverse resolution in propositional form to the clauses $C = A \lor B$, $C1 = A \lor B \lor G$. Give at least two possible results for C_2.	06	CO4	L3

OR

9	a	Describe Q-Learning algorithm.	10	CO4	L2
10	a	Discuss about remarks on explanation-based learning.	05	CO5	L2
	b	Explain the Knowledge Level Learning.	05	CO5	L2

OR

| 11 | | Elaborate The TANGENTPROP Algorithm with suitable example. | 10 | CO5 | L2 |

CO : Course Outcomes

BL : Bloom's Taxonomy Levels   **L 1 : Remembering**   **L 2 : Understanding**

   L 3 : Applying   **L 4 : Analysing**

   L 5 : Evaluating   **L 6 : Creating**

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CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B. Tech. VII Semester Supply End Examinations, April-2024
Machine Learning
Common to CSM &CSD

Time: 3 Hours   **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	What is entropy? How to compute entropy of a given data?	02	CO1	L1
	b	List out any four applications of Machine Learning	02	CO1	L1
	c	What is Perceptrons?	02	CO2	L1
	d	Define sample error.	02	CO2	L1
	e	State Bayes theorem.	02	CO3	L1
	f	What is Computational complexity?	02	CO3	L1
	g	State Two-point crossover	02	CO4	L1
	h	Contrast the FOIL and FOCL?	02	CO4	L1
	i	List two stages of the KBANN algorithm	02	CO5	L1
	j	Provide an application of explanation-based learning algorithm.	02	CO5	L1

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.		Illustrate the basic Decision Tree Learning Algorithm	10	CO1	L2
		OR			
3	a	Distinguish the Find-S and candidate-eliminate algorithm	05	CO1	L2
	b	Explain the impact of over fitting in a typical applications of Decision Tree Learning	05	CO1	L2
4		Discuss how multi-layer networks learn using gradient descent algorithm.	10	CO2	L2
		OR			
5		Write the Back Propagation algorithm for feedforward networks containing two layers of sigmoid units.	10	CO2	L3

6		Design the Brute Force Bayesian concept learning algorithm and elaborate	10	CO3	L3
		OR			
7	a	Illustrate Naive Bayes Classifier of Bayesian learning.	5	CO3	L2
	b	Explain the k-Nearest Neighbor Learning.	5	CO3	L2
8		Describe the prototypical genetic algorithm.	10	CO4	L2
		OR			
9		Explain the learning sets of First-Order rules FOIL.	10	CO4	L2
10		Discuss about the Explanation-based Learning of Search Control Knowledge	10	CO5	L2
		OR			
11		Explain the KBANN Algorithm with suitable example.	10	CO5	L2

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