GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED - SEMESTER– VII EXAMINATION – SUMMER - 2018

Subject Code: 4470601   **Date:30/04/ 2018**
Subject Name: Machine Learning
Time:02:30 PM TO 05:00 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the following terms :	**07**
		(i) Hypothesis	
		(ii) Most General Hypothesis	
		(iii) Most Specific Hypothesis	
		(iv) Inductive Bias	
		(v) Weight	
		(vi) Training data set	
		(vii) Testing data set	
	(b)	What is machine learning? List applications of machine learning.	**07**
Q.2	**(a)**	How information gain and entropy used? Explain with short example.	**07**
	(b)	Explain Find-S algorithm in details.	**07**
		OR	
	(b)	Explain Candidate Elimination algorithm in details.	**07**
Q.3	**(a)**	Deign and draw the BPNN structure with two inputs, three units in hidden layer-1 and two output units. Write the formulas for 1) Calculating errors and 2) Updating weights at each output and hidden units.	**07**
	(b)	Explain step by step process of machine learning.	**07**
		OR	
Q.3	**(a)**	Deign and draw the perceptron with two inputs, two output units. Write the formulas for calculating errors at each output unit and updating the weights.	**07**
	(b)	Explain Bayes theorem in detail.	**07**
Q.4	**(a)**	What is Brute-Force Bayes concept learning? Explain with example.	**07**
	(b)	What is Mistake Bound Model of Learning? How it is used in Find S Algorithm and HALVING Algorithms.	**07**
		OR	
Q.4	**(a)**	What is VC dimension? How it is used?	**07**
	(b)	Explain Case Based Learning with example.	**07**
Q.5	**(a)**	Explain First Order Combined Learner(FOCL) algorithm with example.	**07**
	(b)	Explain explanation based learning in details.	**07**
		OR	
Q.5	**(a)**	What is first order horn clauses? How it is used?	**07**
	(b)	What is Reinforcement Learning ? Explain in details.	**07**

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