GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED– SEMESTER-VII EXAMINATION –SUMMER-2020

Subject Code: 4470601   **Date:04-11-2020**
Subject Name: Machine Learning
Time:10:30 AM to 01:00 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)**	Define Learning Problems. Explain the steps for designing a learning system in detail.	**07**
	(b)	What is Machine Learning? List advantages and limitations of the Machine Learning.	**07**
Q.2	**(a)**	What is a Version Space? How this concept is used in Candidate Elimination algorithm? Explain in detail.	**07**
	(b)	What is Information Gain (IG)? Explain with example addressing calculation of Information Gain and its usage for selection of attributes.	**07**

<div align="center">OR</div>

	(b)	What is Perceptron? Explain Gradient descent in details.	**07**
Q.3	**(a)**	Write a note on Bayes Theorem.	**07**
	(b)	What is decision tree learning? List and explain issues in decision tree learning.	**07**

<div align="center">OR</div>

Q.3	**(a)**	What is BAYESIAN belief network? Explain with example.	**07**
	(b)	What is Neural Network Representation? Explain with example.	**07**
Q.4	**(a)**	Explain the working of CADET System using the concepts of Case Based Reasoning (CBR) algorithm.	**07**
	(b)	Explain K- Nearest Neighbor Learning algorithm.	**07**

<div align="center">OR</div>

Q.4	**(a)**	How sequential covering algorithm works? Explain with suitable example.	**07**
	(b)	Explain Explanation based learning with help of PROLOG-EBG algorithm.	**07**
Q.5	**(a)**	Explain Q – Learning with example.	**07**
	(b)	What is VC dimension? How it is used?	**07**

<div align="center">OR</div>

Q.5	**(a)**	Explain Naïve Bayes Classifier with example.	**07**
	(b)	Explain FOCL in details.	**07**

<div align="center">*************</div>