

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA INTEGRATED– SEMESTER - VII EXAMINATION- SUMMER-2023

Subject Code: 4470601**Date: 26/06/2023****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.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

- Q.1(a)** What is Machine Learning? List advantages and limitations of the Machine Learning. **07**
(b) Explain the Bayes Theorem. **07**
- Q.2(a)** What is Learning Problems. Explain the steps for designing a learning system in detail. **07**
(b) What is Information Gain (IG)? Explain with example addressing calculation of Information Gain. How it is used for selection of attributes. **07**
- OR**
- (b)** Explain Candidate Elimination algorithm in details. **07**
- Q.3(a)** What is decision tree learning? List and explain issues in decision tree learning. **07**
(b) What is BAYESIAN belief network? Explain with example. **07**
- OR**
- (a)** Write a note on **07**
1. Concept learning
2. Artificial Neural Network (ANN)
- (b)** Explain ID3 decision tree algorithm with example. **07**
- Q.4(a)** Explain K- Nearest Neighbor Learning algorithm. **07**
(b) How sequential covering algorithm works? Explain with example. **07**
- OR**
- (a)** What is Brute-Force Bayes concept learning? Explain with example **07**
(b) What is Case Based Reasoning (CBR)? How it helps in learning? Explain with example. **07**
- Q.5(a)** What is VC dimension and explain how it is used? **07**
(b) Compare supervised, unsupervised and reinforcement algorithm with example. **07**
- OR**
- (a)** What is First Order Horn Clauses? How it helps in learning? Explain with example. **07**
(b) Explain First Order Combined Learner (FOCL) algorithm with example. **07**
