

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

**Subject Code: 2678601****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? Write a detail note on types of Machine Learning. **07**
- Q.1 (b)** Explain in detail Data Quality and Data Remediation process in Machine Learning. **07**
- Q.2 (a)** Explain K-fold Cross-Validation method with example in detail. **07**
- Q.2 (b)** Write a detail note on PCA, SVD and LDA. **07**
- OR**
- Q.2 (b)** What is Naïve Bayes classifier? Narrate Principle of Naive Bayes Classifier. **07**
- Q.3 (a)** Discuss k-Nearest Neighbour (kNN) Algorithm in detail with example. **07**
- Q.3 (b)** Write a detail note on Simple Linear Regression Algorithm. **07**
- OR**
- Q.3 (a)** Explain in brief, the Decision Tree Algorithm. **07**
- Q.3 (b)** Discuss Logistic Regression Algorithm in detail. **07**
- Q.4 (a)** Explain in detail k-means Algorithm for Clustering. **07**
- Q.4 (b)** Explain how Market Basket Analysis uses the concepts of Association Analysis **07**
- OR**
- Q.4 (a)** Explain in detail k-medoid Algorithm for Clustering. **07**
- Q.4 (b)** Explain the Apriori algorithm for association rule learning with example. **07**
- Q.5 (a)** Explain Back propagation Neural network. **07**
- Q.5 (b)** Write a detail note on learning process in ANN. **07**
- OR**
- Q.5 (a)** Explain Artificial Neural Network with suitable example. **07**
- Q.5 (b)** What are the different types of activation functions popularly used? Explain each of them in detail. **07**

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