Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3170724   **Date:01-12-2023**
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.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Differentiate Human Learning & Machine Learning.	**03**
	(b)	What is Feature Subset Selection? Explain it in detail.	**04**
	(c)	Explain Supervised Learning in detail.	**07**
Q.2	**(a)**	What is K-fold cross validation?	**03**
	(b)	What is Clustering in Unsupervised Learning? Explain it in detail.	**04**
	(c)	Explain Reinforcement Learning in detail.	**07**
		OR	
	(c)	Explain dimensionality reduction with its advantages and disadvantages.	**07**
Q.3	**(a)**	List out different issues in machine Learning.	**03**
	(b)	Explain Standard Deviation and Variance with an example in machine learning.	**04**
	(c)	What are the techniques provided in Data Pre-processing? Explain it in brief.	**07**
		OR	
Q.3	**(a)**	What is the difference between Qualitative Data and Quantitative Data?	**03**
	(b)	Explain Under-fitting and Over-fitting with an example.	**04**
	(c)	Explain Probability Distribution Function and Cumulative Distribution Function with an Example.	**07**
Q.4	**(a)**	What is Multiple Linear regression?	**03**
	(b)	What is a bad decision boundary in SVM? Explain it in brief.	**04**
	(c)	Explain Decision Tree in details.	**07**
		OR	
Q.4	**(a)**	What is Monte Carlo Approximation?	**03**
	(b)	Explain Apriori algorithm with its Limitation.	**04**
	(c)	Explain Sampling Distribution with different types of Sampling.	**07**
Q.5	**(a)**	What is Deep Learning?	**03**
	(b)	Explain Hypothesis testing with basic assumptions.	**04**
	(c)	Explain k-Nearest Neighbor classification method in detail with its advantages and disadvantages.	**07**
		OR	
Q.5	**(a)**	Explain Forward pass and Backward pass in neural network.	**03**
	(b)	List out the characteristics of Artificial Neural Network and explain it in brief.	**04**
	(c)	Explain Bayes' theorem in details with the use of Bayesian classifiers.	**07**

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