Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3171114 Date:08/06/2022

Subject Name:Introduction of 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. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	What do you mean by Hypothesis?	**03**
	(b)	Differentiate between supervised and unsupervised Learning	**04**
	(c)	With Suitable Example Explain techniques for dimensionality reduction	**07**
Q.2	**(a)**	What is an Ensemble Learning	**03**
	(b)	Compare Decision Tree and Linear Regression	**04**
	(c)	With Suitable Example Explain techniques for dimensionality reduction State main difference between Bays Classifier and Naïve Bays Classifier Also Design a predictor for given Data of whether-enjoy sport –or not using Naïve Bays Classifier.	**07**

Frequency Table		
Weather	No	Yes
Overcast		4
Rainy	3	2
Sunny	2	3
Grand Total	5	9

OR

	(c)	Explain with Suitable Pseudo code implementation of logistic regression	**07**
Q.3	**(a)**	How bagging is used in Machine learning	**03**
	(b)	How perceptron works explain	**04**
	(c)	Explain with Suitable Pseudo code implementation of SVM.	**07**

OR

Q.3	**(a)**	How Boosting is used in machine learning	**03**
	(b)	Compare ReLu and Soft Max Function used in Neural Networks.	**04**
	(c)	Explain with suitable example back propagation Algorithm.	**07**
Q.4	**(a)**	Define with neat sketch Maximum Margin	**03**
	(b)	Differentiate between weights and Hyper parameter	**04**
	(c)	Give pseudo code for classification using Neural network	**07**

OR

Q.4	**(a)**	What is Deep learning?	**03**
	(b)	What do you mean by Over fitting, How to Solve this Problem	**04**
	(c)	Derive bound on number of training samples require for given accuracy, Define VC Dimension and Explain how to find its value using suitable example.	**07**

Q.5	**(a)**	Define Cost Function of Neural network	**03**
	(b)	Illustrate Bias and Variance problem of machine learning	**04**
	(c)	How random forest algorithm can be build using decision tree?	**07**
		OR	
Q.5	**(a)**	Explain about Hierarchical Clustering.	**03**
	(b)	Differentiate between linear regression and logistic regression.	**04**
	(c)	Explain in detail working of K-mean clustering algorithm.	**07**

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