Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- VII EXAMINATION-SUMMER 2023

Subject Code: 3171114 Date: 26/06/2023

Subject Name: Introduction of 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)**	What do you mean by weights?	**03**
	(b)	Compare Re. Lu. and Soft Max activation functions.	**04**
	(c)	How learning is achieved using supervised learning algorithm.	**07**
Q.2	**(a)**	What do you mean by deep learning?	**03**
	(b)	How decision tree algorithm can be used for classification	**04**
	(c)	How to apply K nearest neighbor algorithm	**07**
		OR	
	(c)	How Dimensionality reduction is achieved by PCA.	**07**
Q.3	**(a)**	Design linear repressor using pseudo code / python code.	**03**
	(b)	Design logistic repressor using pseudo code / python code	**04**
	(c)	Using Naïve bays algorithm predict probability of golf play given whether today = (Sunny, Hot, Normal, False)	**07**

Sr. No.	Outlook	Temperature	Humidity	Windy	Play Golf
0	Rainy	Hot	High	FALSE	No
1	Rainy	Hot	High	TRUE	No
2	Overcast	Hot	High	FALSE	Yes
3	Sunny	Mild	High	FALSE	Yes
4	Sunny	Cool	Normal	FALSE	Yes
5	Sunny	Cool	Normal	TRUE	No
6	Overcast	Cool	Normal	TRUE	Yes
7	Rainy	Mild	High	FALSE	No
8	Rainy	Cool	Normal	FALSE	Yes
9	Sunny	Mild	Normal	FALSE	Yes
10	Rainy	Mild	Normal	TRUE	Yes
11	Overcast	Mild	High	TRUE	Yes
12	Overcast	Hot	Normal	FALSE	Yes
13	Sunny	Mild	High	TRUE	No

		OR	
Q.3	**(a)**	Why over fitting is not good	**03**
	(b)	What modification is done by naïve in bays classifier? Why?	**04**
	(c)	Design SVM classifier using pseudo code / python code	**07**
Q.4	**(a)**	What do you mean by Hyper parameters?	**03**
	(b)	How feed forward neural network works Explain?	**04**
	(c)	How error reduction achieved in neural network using back propagation prove it using necessary equation	**07**
		OR	

Q.4	**(a)**	What do you mean by Neuron?	**03**
	(b)	How to apply hierarchical clustering algorithm.	**04**
	(c)	How many training Examples are needed explain using VC Bound?	**07**
Q.5	**(a)**	What is Ensemble learning	**03**
	(b)	bagging and Boosting improve decision. justify	**04**
	(c)	How to apply random forest algorithm Explain in detail	**07**

OR

Q.5	**(a)**	What is feature selection?	**03**
	(b)	How feature extraction technique used for Machine learning?	**04**
	(c)	Design perceptron neural network using pseudo code / python code	**07**

****