Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.VOC- SEMESTER–VI EXAMINATION – WINTER 2024

Subject Code:21160201 Date:19-11-2024

Subject Name: Introduction to AI & ML

Time:02:30 PM TO 04:30 PM Total Marks:50

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 is a Strong AI ? Explain AI Tools which are used in day to day life.	**05**
	(b)	Explain the types of knowledge and give the difference between them.	**05**
Q.2	**(a)**	Give the difference between Classification and Regression.	**05**
	(b)	Explain types of machine learning.	**05**
		OR	
	(b)	Explain Reinforcement learning .	**05**
Q.3	**(a)**	What is regression? Explain Linear regression in detail.	**05**
	(b)	Explain the difference between simple linear regression and multiple linear regression.	**05**
		OR	
Q.3	**(a)**	Perform linear regression on this dataset. Use Y=aX+b for a single variable. Here, Y is a predictable variable and X is an independent variable. Find sales in the 7th week.	**05**

X(Week)	Y(Sales)
1	1.2
2	2.3
3	3.4
4	1.8
5	2.2

	(b)	What is a cost function ? How it can be used to minimize error.	**05**
Q.4	**(a)**	Explain regression evaluation metrics with a formula.	**05**
	(b)	Explain Decision Tree algorithm.	**05**
		OR	
Q.4	**(a)**	Explain logistic regression with an example.	**05**
	(b)	Explain Naive Bayes algorithm.	**05**
Q.5	**(a)**	How does the K-Means clustering algorithm work, and what are its advantages and disadvantages?	**05**
	(b)	Explain various types of clustering.	**05**
		OR	
Q.5	**(a)**	What are clustering algorithms, and what is their primary objective in data analysis?	**05**
	(b)	Explain the difference between supervised and unsupervised learning, and where does clustering fit into this classification?.	**05**

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