

GUJARAT TECHNOLOGICAL UNIVERSITY**B.VOC - SEMESTER- VI EXAMINATION – SUMMER 2024****Subject Code: 21160201****Date:14-05-2024****Subject Name: Introduction to AI & ML****Time:10:30 AM TO 12:30 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 an AI? Explain AI Techniques.	05
	(b) Explain Predicate logic.and Convert facts into predicate logic. 1 . Marcus was a man. 2. Marcus was a Pompeian. 3. Some Pompeians were Romans. 4. Caesar was a ruler. 5. All Romans were either loyal to Caesar or hated him.	05
Q.2	(a) Give the difference between Classification and Regression.	05
	(b) Explain supervised machine learning with an example. OR (b) Explain unsupervised learning with an example.	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. OR	05
Q.3	(a) What is a cost function ? How it can be used to minimize error	05
	(b) What is gradient descent in linear regression? Explain the different steps for gradient descent.	05
Q.4	(a) What are the different problems that occur in machine learning during the training phase? explain it in detail.	05
	(b) Explain Decision Tree algorithm. OR	05
Q.4	(a) Explain logistic regression with an example.	05
	(b) Explain SVM.	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. OR	05
Q.5	(a) What are clustering algorithms, and what is their primary objective in data analysis?.	05
	(b) Provide examples of real-world applications for clustering algorithms in various domains	05
