

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V EXAMINATION – WINTER 2025

Subject Code:3155202

Date:25-11-2025

Subject Name:Machine Learning using Python

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) Define issues in machine Learning.	03
	(b) Differentiate supervised and unsupervised learning.	04
	(c) Explain Reinforcement learning	07
Q.2	(a) Define Machine learning? Briefly explain the types of learning	03
	(b) Summarize machine learning and its applications.	04
	(c) Illustrate Logistic regression in detail.	07
	OR	
Q.3	(c) What is Central limit theorem give with example?	07
	(a) Explain k-fold cross validation with suitable diagram.	03
	(b) Give Difference between Linear regression and logistic regression	04
	(c) Write short note on k-Nearest Neighbors (k-NN).	07
	OR	
Q.3	(a) State importance of Stemming and lemmatization.	03
	(b) Explain k-Means Clustering and its characteristics	04
	(c) What is preprocessing? Discuss various methods of preprocessing.	07
Q.4	(a) Discuss TF-IDF.	03
	(b) Explain Agglomerative Clustering and its characteristics.	04
	(c) Illustrate the working of DBSCAN algorithm with suitable example.	07
	OR	
Q.4	(a) Explain dependent variable and an independent variable in a linear equation with example.	03
	(b) What are the Benefits of Cross Validation?	04
	(c) Illustrate Natural Language Processing (NLP)	07
Q.5	(a) Give brief about various Challenges in Unsupervised Learning	03
	(b) What is text classification? Give suitable example.	04
	(c) Explain Central limit theorem.	07
	OR	
Q.5	(a) Illustrate binomial distribution with example.	03
	(b) Differentiate Metrics for Binary Classification, Metrics for Multiclass Classification.	04
	(c) Explain Linear regression vs logistic regression.	07
