

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER–VI EXAMINATION – WINTER 2025****Subject Code:3161613****Date:19-11-2025****Subject Name:Data Analysis and Visualization****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) Discuss Descriptive statistics in data analysis.	03
	(b) Provide your views on Data Visualization.	04
	(c) Discuss classification with suitable example.	07
Q.2	(a) Describe probability.	03
	(b) Discuss time series analysis.	04
	(c) List and Discuss classification techniques.	07
	OR	
	(c) List and Discuss clustering techniques.	07
Q.3	(a) Discuss Nearest Neighbor analysis.	03
	(b) Write about finding clusters using the Density-based spatial clustering of noisy applications (DBScan) neighbourhood.	04
	(c) Describe KNN with suitable example.	07
	OR	
Q.3	(a) Discuss overfitting and methods to avoid it in classification.	03
	(b) Write about Kernel Density Estimation (KDE) for Cluster Estimation.	04
	(c) Explain working of Random Forest Algorithm with suitable example.	07
Q.4	(a) Enumerate the six processes in the data visualization creation process.	03
	(b) Explain the use of Buffering and Proximity functions.	04
	(c) Describe how to use querying, overlaying, and classifying techniques to analyze spatial data.	07
	OR	
Q.4	(a) List suitable graphics visualization elements that are good for for data storytelling, data showcasing, and data art in data visualizations.	03
	(b) Describe the use of Plotly python library in visualization.	04
	(c) Discuss about several aspects of creating a data visualization dashboard.	07
Q.5	(a) Provide your views on context in data visualization.	03
	(b) Describe the data graphic. In simply, describe comparative graphics.	04
	(c) List and Discuss The Big Three.	07
	OR	
Q.5	(a) Discuss about the suitable design approach for data visualization.	03
	(b) Describe the goal of the D3.js data visualization library.	04
	(c) Explain the K-means clustering algorithm using a suitable example.	07
