

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY
2025****Third Semester****Artificial Intelligence and Data Science****AD3301 – Data Exploration and Visualization****Regulations - 2021****Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	List out the different phases of Data Analysis.	L1	1	2
2.	Define Data Aggregation.	L1	1	2
3.	Compare Plot versus Scatter.	L2	2	2
4.	How to draw different styles of lines.	L1	2	2
5.	Differentiate Hanning and Hamming windows by outlining their characteristics.	L2	3	2
6.	Recall the formula of gini coefficient.	L1	3	2
7.	Define Bivariate analysis.	L1	4	2
8.	List three libraries in R that can be used for Data Visualization.	L1	4	2
9.	How do you control a specific variable?	L1	5	2
10.	Outline the index types of time series.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a i Explain the significance of Exploratory Data Analysis in data science.	L2	1	8
	ii Compare Exploratory Data Analysis with classical and Bayesian analysis in terms of their objectives and methodologies.	L2	1	8
	Or			
	b i Identify the various data transformation techniques used in data preprocessing and indicate their significance in improving data quality.	L2	1	8
	ii Illustrate the key techniques for grouping datasets and abstract their significance in data analysis.	L2	1	8
12.	a Apply a comprehensive analysis using simple line plots, scatter plots, and assess their effectiveness in conveying different types of data relationships.	L3	2	16
	Or			
	b Use a basemap to analyze geographic data and assess its effectiveness in visualizing spatial information.	L3	2	16

13.	a	Apply various distributions to analyze their impact on different types of variables within a chosen dataset, and evaluate the findings.	L3	3	16
Or					
	b	Apply various smoothing techniques to time series data and evaluate their effectiveness in identifying trends and patterns.	L3	3	16
14.	a	Utilize percentage tables to analyze categorical data and assess their effectiveness in summarizing information.	L3	4	16
Or					
	b	Apply scatterplots to examine data relationships and evaluate the effectiveness of resistant lines in modeling trends.	L3	4	16
15.	a	Analyze the three-variable contingency tables to analyze relationships among categorical variables in summarizing complex data.	L4	5	16
Or					
	b	Examine time-based indexing to analyze trends in time series data and evaluate its effectiveness in improving data retrieval and analysis.	L4	5	16