

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

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)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Explain the significance of EDA in data science.	UN	1	2
2.	Compare reshaping and pivoting in EDA.	UN	1	2
3.	What is matplotlib used for?	UN	2	2
4.	List the importance of using seaborn for visualization.	RE	2	2
5.	Is it necessary to smooth a time series data? Justify your statement.	AP	3	2
6.	Explain concept of inequality in data.	UN	3	2
7.	Differentiate percentage tables and contingency tables.	UN	4	2
8.	Is bivariate qualitative or quantitative? Justify it.	UN	4	2
9.	List the common techniques used to perform dimensionality reduction.	RE	5	2
10.	Define the concept of resampling frequency in time series analysis.	UN	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Compare EDA with classical and bayesian analysis.	AN	1	6
	ii What is the primary purpose of EDA? Discuss in detail.	UN	1	7
	Or			
	b i Explore the significance of grouping datasets and how it aids in focused analysis.	AN	1	6
	ii What is cross-tabulation and pivot table? How to build pivot table and cross tab reports?	UN	1	7
12.	a Explain the visualization of three-dimensional function in python. Illustrate with the code.	UN	2	13
	Or			
	b Explain a step-by-step illustration of how to create subplots in Matplotlib?	UN	2	13

13.	a	Explain about the scaling and standardization with suitable examples.	UN	3	13
Or					
	b	Explain about the various numerical summaries in statistics with an example.	UN	3	13
14.	a	How do you analyze contingency tables? Explain.	UN	4	13
Or					
	b	Illustrate the role of scatterplots and resistant lines in visualizing relationships.	UN	4	13
15.	a	What is the best way to visualize time series data? What patterns might appear when you plot the time series data?	UN	5	13
Or					
	b	Explain the construction and interpretation of three-variable contingency tables.	UN	5	13

*PART – C (MARKS 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	What are the tools used for EDA? Give a case study on applying EDA in a real business scenario.	UN	2	15
Or					
	b	Describe the various distributions module of seaborn for visualization. Consider a sample application to illustrate.	UN	2	15