Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (R, S) Examination November 2025 (2019 Scheme)

Course Code: AMT301
Course Name: DATA HANDLING AND VISUALIZATION

Max. Marks: 100 Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

		Marks
1	Write a short note on datasets types.	3
2	Define semantics in data visualization.	3
3	Differentiate shape channel and motion channel.	3
4	Write a short note on tensor fields.	3
5	Write a program to check a number is even or odd in R.	3
6	Find the sum, min, and max of the vector in R programming.	3
7	Implement the R program to draw a line chart.	3
8	Differentiate Choropleth maps and Contours maps.	3
9	List out the type of attacks in visualization	3
10	Describe the vulnerability assessment tools in visualization	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

11	a)	Describe the concept of task abstraction taxonomies.	7
	b)	Explain how visual channels control the appearance of marks.	7
12	a)	Describe any two validation examples with suitable diagram.	7
	b)	Explain the different validation approaches required for various threat levels.	7

Module -2

13	a)	Describe about arrangement of spatial data using vector fields.	7
	b)	Distinguish between Tree maps and Grouse Flocks in containment of networks and trees.	7
14	a)	Describe the different methods used in spatial layout density for the arrangement of tables.	7

	b)	With suitable example, explain the node link diagram of networks and trees.	7

Module -3

15	a)	Implement a R program to concatenate two given matrices of same rows but different columns.	7
	b)	Explain about different loops in R programming with example.	7
16	a)	Explain in detail how the par() function can be used to beautify plots in R.	7
	b)	Write a R program to create a data frame from four given vectors.	7

Module -4

17	a)	Implement the R code to merge two histograms.	7
	b)	Describe Heat map. Write the example R code to construct a Heat map.	7
18	a)	Write a R program to generate an interactive bar plot.	7
	b)	Illustrate the need of a 3D pie chart? Write the sample code to generate a 3D Pie chart in R.	7

Module -5

19	a)	Describe about port scan visualization.	7
	b)	Explain Firewall Logging Visualization.	7
20	a)	Summarize Vulnerability Assessment and Exploitation.	7
	b)	Discuss in detail about Intrusion detection log visualization.	7

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