Register Number:……..

KUMARAGURU
college of technology
character is life

B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Fifth Semester

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

U18AII5202: Exploratory Data Analysis and Visualization

COURSE OUTCOMES

CO1: Understand the main principles of data analysis
CO2: Design core skills for visual analysis
CO3: Identify and apply visualization techniques for various data analysis tasks
CO4: Apply and implement the visualization concepts in various streams
CO5: Understand the main principles of data analysis

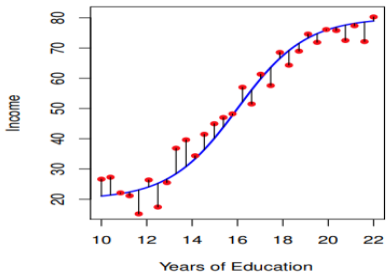
Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Illustrate the concept of over plotting and how it can be reduced	CO1	[K_2]
2.	List out the four methods for reducing the number of values	CO1	[K_1]
3.	Justify the bar chart is effective for analyzing ranking.	CO2	[K_2]
4.	Show the metrics to define the data quality.	CO2	[K_1]
5.	Draw bar graph for the given example and interpret which item is most popular. Assume different food items in different quantities, such as 4 chocolates, 6 pizzas, 3 burgers, and 8 tacos.	CO3	[K_2]
6.	Define drilling during the process of analysis.	CO3	[K_1]
7.	Compare directed and exploratory navigation	CO4	[K_2]
8.	List out five graphs for displaying the time series	CO3	[K_1]
9.	Which plot is used for analyzing irregular intervals.	CO4	[K_4]
10.	Analyze when the correlation analysis is involved and illustrate the statistical summaries of correlation.	CO4	[K_4]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

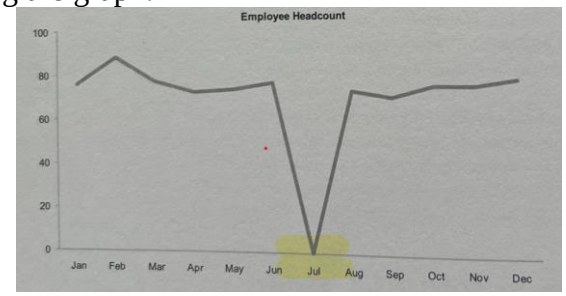
11.	a)	Classify the different types of distribution with an example.	12	CO1	[K_3]
	b)	Interpret the details of Income dataset	4	CO1	[K_4]



12.	a)	Consider the data set: 17, 10, 9, 14, 13, 17, 12, 20, 14. Calculate the measures of central tendency and measures of dispersion.	14	CO1	[K_4]
	b)	Define details on demand	2	CO1	[K_2]
13.	a)	Outline any five methods for over-plotting reduction with an example	12	CO2	[K_2]
	b)	Illustrate the characteristics of Trellises	4	CO2	[K_2]
14.	a)	A group of scientists wants to investigate if they can predict the life expectancy of mammal species given its average heart rate. The table below shows the relationship between average heart rate (in beats per minute) and life expectancy (in years) for a sample of mammals.	12	CO2	[K_4]

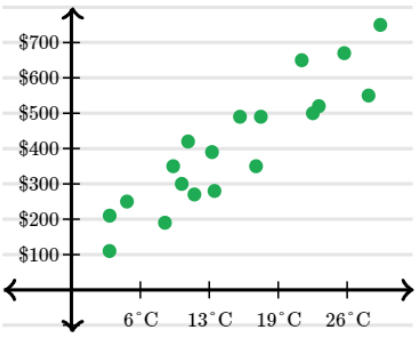
	Whale	Elephant	Horse	Lion	Sheep	Pig
Average heart rate (BPM)	20	30	34	50	75	95
Life expectancy (years)	70	70	40	13	15	25

Construct appropriate graph for analyzing the correlation changes. State the reason for choosing the graph.

	b)		4	CO2	[K_3]

State the inference of given graph.

15.	a)	Explain any four time series analysis techniques	12	CO3	[K_2]
	b)	Describe two fundamental characteristics of time series data in a single graph	4	CO3	[K_2]
16.	a)	Elaborate the types of multivariate analysis techniques with an example	12	CO4	[K_2]
	b)	Find the correlation of given graph.	4	CO4	[K_3]



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