

**Department of CSE (AI&ML)**

**B. Tech. Mid Question Bank (R22 Regulation)**

**Academic Year: 2024-2025**

**Semester:V**

**Subject Name: Introduction to Data Science (22AM512PE)**

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**PART-A**

<b>MID-I Questions</b>					
<b>Q.No</b>	<b>Questions</b>	<b>Marks</b>	<b>BL</b>	<b>CO</b>	<b>Unit No</b>
1	Define Data Science. List out its applications.	2	L1	CO1	I
2	Define Probability and Probability Distribution.	2	L1	CO1	I
3	List out advantages and disadvantages of R Programming.	2	L1	CO1	I
4	What is Bigdata and Datafication?	2		CO1	I
5	Define Over fitting and Under fitting of a model.	2	L1	CO1	I
6	What is statistical inference? List out its types?	2	L1	CO1	I
7	Define attribute in R. List out the type of attributes in R programming.	2	L1	CO2	II
8	What do you mean by Binary and Nominal attribute?	2	L1	CO2	II
9	What do you mean by symmetric and Asymmetric attribute? Give example.	2	L1	CO2	II
10	Define standard deviation, Variance, Quadriles and Interquartile Range.	2	L1	CO2	II
11	Differentiate between Discrete and continuous attributes.	2	L1	CO2	II
12	How to visualization the attribute in R?	2	L1	CO2	II
13	How to create and name Vector?	2	L1	CO2	III
14	Define Factor and levels in R.	2	L1	CO3	III
15	What is named list in R?	2	L1	CO3	III
<b>MID-II Questions</b>					
16	What is Dataframe? Give an example.	2	L1	CO3	III
17	Create Array and Matrix in R.	2	L1	CO3	III
18	Define subsetting of list in R.	2	L1	CO3	III
19	List the Relational operators used in R.	2	L1	CO4	IV
20	Give an example for While Loop and For Loop	2	L1	CO4	IV

	in R.				
21	What is the use of Packages and how to Load packages in R?	2	L1	CO4	IV
22	Define Nested Functions in R and give example.	2	L1	CO4	IV
23	What is Function Scoping?	2	L1	CO4	IV
24	Define Linear and Multiple Regression.	2	L3	CO4	IV
25	Difference between plotting and visualization.	2	L1	CO5	V
26	What are Legends and Annotation?	2	L1	CO5	V
27	Define figures & subplots with an example.	2	L1	CO5	V
28	Define Histogram and Density plot.	2	L1	CO5	V
29	Define Scatter plot, Box plot.	2	L1	CO5	V
30	What is API primer?	2	L1	CO5	V

## PART-B

<b>MID-I Questions</b>					
<b>Q. No</b>	<b>Questions</b>	<b>Marks</b>	<b>B L</b>	<b>CO</b>	<b>Unit No</b>
1	Explain the Life cycle of Data science.	4	L2	CO1	I
2	Discuss the importance of Big data in data science.	4	L2	CO1	I
3	Explain Data science process in briefly.	4	L2	CO1	I
4	Discuss about current landscape of perspective in Data science.	4	L2	CO1	I
5	Explain characteristics of Big data.	4	L2	CO1	I
6	Discuss the problems occur in developing a model and explain how to fit a Model.	4	L2	CO1	I
7	Explain how to build the statistical Model.	8	L2	CO1	I
8	Discuss about R Environment setup. With example explain about the basic data types in R Programming.	8	L2	CO1	I
9	Discuss the following a. Big Data and Data Science Hype b. Probability distribution c. Population and Sample	8	L2	CO2	I
10	Describe the Attributes by numeric values in R with an example.	4	L3	CO2	II
11	Discuss about Graphical Displays.	4	L2	CO2	II
12	Explain how to analyse, manipulate and manage Binary Attributes using R.	4	L2	CO2	II
13	Explain Discrete and Continuous Attributes.	4	L2	CO2	II
14	Explain with example about Nominal Attributes.	4	L3	CO2	II
15	Describe the importance of Ordinal attributes.	4	L3	CO2	II
16	Illustrate the need of measurements and explain i) Measuring the Central Tendency	8	L2	CO2	II

	ii)Measuring the Dispersion of Data				
17	Explain with an example a. how to create a data frame b. to add the new variables to data frame. c. how to modify a data frame in R? d. How to find total and unique values	8	L3	CO2	II
18	Discuss a. Different types of attributes b. Basic Statistical Descriptions	8	L2	CO2	II
19	Explain about Creating and Naming Vectors.	4	L2	CO3	III
20	Explain about a. Creating and Naming matrices. b. Vector arithmetic	4	L2	CO3	III
21	Discuss about Matrix Sub setting, Arrays, Class.	4	L2	CO3	III
<b>MID-II Questions</b>					
22	Explain with example 1.Factor Levels 2.Summarize a Factor 3.Converting Lists to Vectors 4.Ordered Factors	4	L3	CO3	III
23	Discuss about extending Dataframes and Sorting Dataframes.	4	L2	CO3	III
24	Illustrate how to i) Manipulate List Elements ii)Merging Lists	4	L3	CO3	III
25	Explain in detail about Logical Operators with examples in R.	4	L3	CO4	IV
26	Explain in detail about Relational operator and vector in R.	4	L2	CO4	IV
27	Explain in detail about Mathematical Functions in R.	4	L2	CO4	IV
28	Write in detail about Iterative programming in R.	4	L2	CO4	IV
29	Explain about Nested Functions with examples in R.	4	L3	CO4	IV
30	Write in detail about function scoping in R.	4	L2	CO4	IV
31	How to write Functions in R? Explain about Looping over Lists in R.	8	L2	CO4	IV
32	With example explain 1. While loop. 2. For loop. 3. Looping Over List.	8	L3	CO4	IV
33	Discuss about 1.Conditional Operator 2.Logical Operator and vector 3.Relational Operators and Vector	8	L2	CO4	IV
34	Explain I) How to Save Plots to File II)Plotting Functions in pandas,	4	L2	CO5	V
35	Describe the ticks, labels, and legends with an example.	4	L3	CO5	V
36	Describe the color, markers, and line style with an	4	L2	CO5	V

	example				
37	Explain about Multiple Linear Regressions.	4	L2	CO5	V
38	Explain in brief about Linear Regression Analysis with an example.	4	L2	CO5	V
39	Write in brief about Matplotlib with example.	4	L3	CO5	V
40	Explain API Primer, Figures, Subplots, Colors, Markers, Line Styles, Ticks, Labels, and Legends.	8	L2	CO5	V
41	Create a scenario to draw 1.Line plot 2.Histogram 3.Density plot 4.Scatter plot	8	L2	CO5	V
42	Discuss about A. Annotations and Drawing on a Subplot B. Linear and Multilinear Regression Analysis.	8	L2	CO5	V

