Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – MAY 2025

Date: 21-05-2025 **Time:** 01:00 pm – 04:00 pm

School: SOIS	**Program:**BCA	
Course Code : CSA2019	**Course Name:**R Programming for Data Science	
Semester: IV	**Max Marks**: 100	**Weightage**:50%

CO - Levels	CO1	CO2	CO3	CO4	CO5
Marks	26	24	26	24	-

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1	Define GGPLOT.Give an example.	2 Marks	L1	CO1
2	What are the built-in mathematical functions available in R?	2 Marks	L1	CO1
3	How to create a Dataframe in R ? Give an example	2 Marks	L1	CO1
4	Compare Numerical and Character Vector.	2 Marks	L2	CO2
5	List the functions for finding missing values in dataset.	2 Marks	L1	CO2
6	How to import data in R?	2 Marks	L1	CO3
7	What is Regression Analysis?	2 Marks	L1	CO3
8	Compare Correlation and Regression.	2 Marks	L1	CO3
9	What is the primary goal of a classification algorithm in machine learning?	2 Marks	L1	CO4
10	List down some of the metrics used to evaluate a Regression Model.	2 Marks	L1	CO4

Part B

Answer the Questions. **Total Marks 80M**

11	a.	Explain about all data types in R.Give an example.	10 Marks	L2	CO1
	b.	Construct a simple calculator using R. Get the user to choose an operation: • Addition • Subtraction • Multiplication • Division Prompts the user to enter two float numbers.	10 Marks	L3	CO1
		Or			
12.	a.	Illustrate about various statistical and mathematical functions in the mpg dataset.	10 Marks	L2	CO1
	b.	Explain in detail about dplyr functions.Give an example.	10 Marks	L2	CO1

13.	**a.**	How can Linear Regression be performed using the MTCARS dataset in R? **a.** Install and loading necessary packages b. Splitting data into training and testing sets c. Building a machine learning model d. Model evaluation and prediction	20 Marks	L1	CO2
		Or			
14.	**a.**	Analyze and draw the below dataset • Displaying up the top rows of the dataset with their columns • Displaying the number of rows randomly. • Displaying the number of columns and names of the columns. • Displaying the shape of the dataset. • Slicing the rows • Create Bar plot,Scatter Plot,Histogram	20 Marks	L4	CO2

Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
1	5.1	3.5	1.4	0.2	Iris-setosa
2	4.9	3	1.4	0.2	Iris-setosa
3	4.7	3.2	1.3	0.2	Iris-setosa
4	4.6	3.1	1.5	0.2	Iris-setosa
5	5	3.6	1.4	0.2	Iris-setosa
6	5.4	3.9	1.7	0.4	Iris-setosa
7	4.6	3.4	1.4	0.3	Iris-setosa
8	5	3.4	1.5	0.2	Iris-setosa
9	4.4	2.9	1.4	0.2	Iris-setosa
10	4.9	3.1	1.5	0.1	Iris-setosa
11	5.4	3.7	1.5	0.2	Iris-setosa
12	4.8	3.4	1.6	0.2	Iris-setosa
13	4.8	3	1.4	0.1	Iris-setosa
14	4.3	3	1.1	0.1	Iris-setosa
15	5.8	4	1.2	0.2	Iris-setosa
16	5.7	4.4	1.5	0.4	Iris-setosa
17	5.4	3.9	1.3	0.4	Iris-setosa
18	5.1	3.5	1.4	0.3	Iris-setosa
19	5.7	3.8	1.7	0.3	Iris-setosa

15.	**a.**	How can Linear Regression and Multiple Regression be carried out using the Iris dataset in R? a. Install and loading necessary packages b. Splitting data into training and testing sets c. Building a machine learning model d. Model evaluation and prediction	**20 Marks**	**L1**	**CO3**
		Or			
16	**a.**	Explain the Logistic regression model and provide an example of its use. Apply the regression models: For the above data: •Create a Regression plot with the following specifications. •Display the title of the graph as “Height Vs. Weight” •Set the color of the plot as blue •Set title for X and Y axis	**20 Marks**	**L2**	**CO3**
17.	a.	Create a sample dataset and identify outliers using 6 types of plot with an example.	**20 Marks**	**L6**	**CO4**
		Or			
18	**a.**	Illustrate about the different aspects of classification and explain any one of the classification with neat sketch.	**20 Marks**	**L2**	**CO4**

Height	156	145	178	167	160	170
Weight	45	67	56	89	67	48