

Roll No.

Total No. of Pages : 02

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B.Tech. (AI&DS/DS)(Sem.-5)

**STATISTICAL COMPUTING TECHNIQUES USING R**

Subject Code :BTES 501-20

M.Code :93936

Date of Examination :18-11-2025

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a. How do you check the type of an object in R?
- b. List two functions (with syntax) for reading external data into R.
- c. Write the syntax of while loop in R.
- d. Define probability distribution.
- e. Give the syntax to create a matrix in R.
- f. What is the purpose of the break statement in R? Provide examples of how to use it?
- g. What is a scatterplot?
- h. Define statistical hypothesis testing.
- i. Define regression analysis.
- j. What is the difference between a data-frame and a list?

## SECTION - B

2. What is the purpose of the data() function in R? Provide examples of how to use it?
3. What are system-defined functions in R? Illustrate with examples.
4. Write R code to generate and interpret histograms and boxplots.
5. Explain the bootstrap method for computing standard errors in R.
6. How do you perform a simple linear regression analysis in R? Provide examples of how to interpret the results?

## SECTION - C

7. Describe the different ways to access and manipulate data in R, including vectors, matrices and lists. Provide examples of each.
8. Describe the different control structures in R, including if-else statements and loops. Provide examples of each.
9. Explain the concept of probability distributions in R, including the different types of distributions (e.g., normal, binomial, Poisson). Provide examples of how to generate random numbers from these distributions?

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**