



Anurag University

B Tech III Year II-Semester Regular & Supplementary Examinations, April-2024

**Course: R Programming
(Common to CSE, AI & AIML)**

Time: 3Hours

Max Marks: 60

Section –A (Short answer type questions)

- **Answer all questions: (10 x 2 =20Marks)**

1. Differentiate R and R Studio.
2. Define Class. What is S3 Class?
3. What is an ordered factor? Give an example.
4. Differentiate | vs || in two aspects.
5. List various I/O operations available in R.
6. List various mathematics functions in R.
7. Mention the purpose of sapply. Give an example.
8. What is a scatter plot? Give an example.
9. Define multiple regression. Give an example.
10. Mention the purpose of importing Web Data with an example.

Section—B (Essay answer type questions)

- **Answer all questions: (5 x 8 =40 Marks)**

11. A) i) List and demonstrate various basic datatypes of R with sample code. 5M
 ii) Define Matrix sub setting. Give a sample code for matrix sub setting. 3M

OR

- B) i) Define a vector. Explain vectors using basic arithmetic operations with a sample code. 4M
 ii) What are arrays? Explain arrays with basic operations in R. 4M

12. A) Define a data frame. Demonstrate a data frame creation with any sample data source and apply various operations on the data frame. 8M

OR

- B) Define a list. Differentiate a list and vectors. Write a R script to sort and merge two lists. 8M

13. A) i) Define a nested function. Give an example using a code snippet. 4M
 ii) Write a R Script that finds the matrix multiplication. 4M

OR

- B) i) Write a R Script that performs various loops on a data frame. 5M
 ii) Write a R Script that returns complex objects. 3M

14. A) Mention the purpose of tapply. Demonstrate split function with sample code. 8M

OR

- B) Demonstrate various charts and graphs with sample code with the due consideration of dataset available. 8M

15. A) i) With a sample code demonstrate how a JSON file is imported and used? 4M
ii) Demonstrate a Chi-squared Test of Fit Test with a suitable example in R. 4M

OR

- B) i) With a sample code demonstrate how a XML file is imported and used? 4M
ii) What is the purpose of ANOVA? Demonstrate the use of ANOVA with a sample example. 4M