PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(Sixth Semester)

Branch – COMPUTER TECHNOLOGY

R PROGRAMMING

Time: Three Hours   Maximum: 50 Marks

SECTION-A (5 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 1 = 5)

1. What is the primary function of the install.packages() function in R?
   i) To load installed packages into the current R session.
   ii) To download and install packages from CRAN (Comprehensive R Archive Network).
   iii) To update all installed packages to their latest versions.
   iv) To list all available packages on CRAN.

2. What is the purpose of data reshaping in R using functions like reshape() or tidyr package? (K1)
   i) To subset data based on specific conditions.
   ii) To merge multiple datasets into one.
   iii) To change the structure of data from wide to long format or vice versa.
   iv) To visualize data using various plotting functions.

3. Which function in R is used to generate random numbers following a binomial distribution?
   i) rbinom()   ii) dbinom()   iii) pbinom()   iv) qbinom()

4. Which function in R is commonly used to fit linear regression models?
   i) lm()   ii) glm()   iii) reg()   iv) fit()

5. Which R package provides functions for building decision trees?
   i) rpart   ii) randomForest   iii) caret   iv) ggplot2

SECTION - B (15 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 3 = 15)

6. a Describe the features of R programming.
   OR
   b Explain the concept of vectors in R. How are they created and accessed?

7. a How do you read a CSV file in R?
   OR
   b Analyse the concepts of ggplot2 in R.

8. a How do you make a normal distribution in R?
   OR
   b Summarize covariance and correlation in R.

9. a State the basic assumptions of multiple regression.
   OR
   b Sketch the survival analysis in R.

10. a Apply generalized additive mixed model in R.

OR

b Explain hierarchical clustering in R, with principles and how it can be implemented using the appropriate function?

SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks   (5 x 6 = 30)

11.a How do you install and load the packages in R? What is the code for installing packages in R?.

OR

b What is an array? Write a R program to find the Sum of Elements in an Array.

12. a Create a csv file and convert it to a binary file and store it as a OS file.

OR

b Explain cbind, rbind and merge funcion in R programming.

13. a Explain the binomial distribution in R, with parameters, functions used for calculation.

OR

b Explain in detail T-Test Approach in R Programming.

14.a Explain logistic regression with example.

OR

b Summarize the concept of simple linear regression in R.

15.a Discuss about decision tree in R with example.

OR

b Point out k-means clustering in R programming.

Z-Z-Z   END