Class : - B. Com IT – III **R Programming**

UNIT–1: Introduction to R

Short Answer

1. What is R? List the important features of R.
2. Explain the steps involved in installing R and RStudio.
3. Define variables and constants in R with suitable examples.
4. Explain different operators in R.
5. Describe the basic data types in R.
6. What are R objects? Explain any three types.
7. Explain how input is accepted from the user in R.
8. List and explain any five important built-in functions in R.
9. How are vectors created in R? Explain with examples.
10. Explain vector arithmetic operations in R.

Long Answer

1. Explain the features of R and discuss its applications.
2. Describe different data types and R objects with examples.
3. Explain the creation of vectors and accessing vector elements with suitable examples.
4. Discuss various operators used in R with examples.
5. Explain vector arithmetic and operations on vectors in detail.
6. Write a detailed note on accepting input and using built-in functions in R.

UNIT–2: Control Statements and Functions

Short Answer

1. Explain the if…else control statement in R.
2. What is the ifelse() function? Give an example.
3. Explain the switch() function in R.
4. Describe the use of while loop and for loop.
5. What is a repeat loop? How does it differ from other loops?
6. Explain break and next statements in R.
7. Differentiate between formal and actual arguments.
8. Explain named arguments with examples.
9. What is lazy evaluation in R?
10. Write a short note on global and local variables.

Long Answer

1. Explain all control statements in R with examples.
2. Discuss different looping constructs in R with suitable examples.
3. Explain functions in R, including arguments, named arguments, and lazy evaluation.
4. Describe recursive functions in R with an example.
5. Explain string creation and manipulation in R.
6. Discuss paste() and format() functions for string and number formatting.

UNIT–3: Matrices, Arrays, and Data Frames

Short Answer

1. What is a matrix? How is it created in R?
2. Explain how elements of a matrix are accessed.
3. Describe matrix transpose with an example.
4. What are arrays? How are they created in R?
5. Explain how to access array elements.
6. What is a data frame?
7. List any four basic operations performed on data frames.
8. Differentiate between matrices and data frames.

Long Answer

1. Explain matrix creation, access, and operations with examples.
2. Describe different operations on matrices, including transpose.
3. Explain arrays in R and calculations across array elements.
4. Discuss data frames in detail and explain basic operations on data frames.
5. Compare matrices, arrays, and data frames with suitable examples.

UNIT–4: Introduction to Data Visualization

Short Answer

1. Define data visualization and explain its importance.
2. Explain the steps to install and load packages in R.
3. How is data imported into R?
4. What is missing data? How is it handled in R?
5. Explain how to extract a subset of a data frame.
6. Write a short note on scatter plots.
7. Explain box plots and their uses.
8. Describe bar plots and stacked bar plots.
9. What is a histogram?
10. Explain the plot() function in R.

Long Answer

1. Explain data visualization basics and their significance.
2. Describe different methods of handling missing data in R.
3. Explain scatter plot, box plot, and histogram with examples.
4. Discuss bar plots, stacked bar plots, and plotting categorical data.
5. Explain line plots and the plot() function in detail.
6. Describe pie charts and 3D pie charts with suitable examples.