

Exam. Code : 206603

Subject Code : 5019

M.Sc. Bio-Informatics 3rd Semester

**INTRODUCTION TO DATA ANALYSIS USING
R-PROGRAMMING**

Paper : BI-635

Time Allowed—3 Hours]

[Maximum Marks—75

Note :— Candidates are required to attempt **five** questions, selecting at least **one** question from each section. The **fifth** question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Explain data types, factors and Data Frames in R with one example. Explain data frame function: `nrow()`, `ncol()`, `dim()`, `str()` and `head()`.
2. What is a function in R ? Discuss different operators in R with examples.

SECTION—B

3. Explain function and arguments in R with example. What do you understand by object oriented programming in R ?
4. What are `read.csv` and `write.csv` function ? Discuss reading a.csv file in R. Explain arguments of csv readers.

SECTION—C

5. Create a table of any ten patients with their weight and age (arbitrary name, weight and age can be used). Calculate mean and range using R. How bar chart and pie charts are plotted in R ?
6. Discuss Principle component analysis. Explain hierarchical clustering and its application using R.

SECTION—D

7. What is R Base ? Explain its application for sequence analysis.
8. Discuss use of R in analysis of VAR-Seq data.