

Exam. Code : 206603

Subject Code : 4666

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 can be attempted from any section. All questions carry equal marks (15×5=75).

SECTION—A

1. What is R Interpreter ? Explain Data Frames and Matrices in R with one example. Explain data frame function : head (), tail (), dim (), str ().
2. What are different operators in R ? Explain with examples.

SECTION—B

3. Discuss how database can be connected in R ? Explain how data is imported from a database.
4. How a .csv file can be read in R ? Explain function read.csv and write.csv with an example. Discuss arguments of csv readers.

SECTION—C

5. Create a table containing name of six proteins, their molecular weight and pI (arbitrary name, weight and pI can be used). How would you calculate mean and range of protein molecular weight and pI using R ? Discuss scatter plot and box plot in R.
6. Discuss cluster analysis. How do you plot PCA in R ?

SECTION—D

7. What is Bioconductor ? Explain its application.
8. Discuss application of R in analysis of ChIP-Seq data.