CBCS

DEPARTMENT OF MATHEMATICS - B.Sc
Value Added Course

Title of the Paper: INTRODUCTION TO R SOFTWARE

Semester: V   **Contact hours: 2 hrs**

Sub code : 21MVAC   **Credits: 1**

Objective:

- ➢ Understand various data import methods and the Data Manipulation in R
- ➢ Build the skill to launch a successful Data Analyst Career

Unit I: Basic fundamentals,   installation and use of software, data editing, use of R as a calculator, functions and assignments.

Unit II: Matrix operations, missing data and logical operators. Conditional executions and loops, data management with sequences.

Unit III: Data management with repeats, sorting, ordering   and lists. Vector indexing, factors, Data management with strings, display and formatting.

Unit IV: Data management with display paste, split, find and replacement, manipulations with alphabets, evaluation of strings, Data frames, import of external data in various file formats,

Unit V: Statistical functions, compilation of data. Graphics and plots, statistical functions for central tendency, variation, skewness and kurtosis, handling of bivarite data through graphics, correlations, programming and illustration with examples

Text Book

R for Beginners by Emmanuel Paradis(12th September 2005)

https://cran.r-project.org/doc/contrib/Paradis-rdebuts_en.pdf

Books for References:

The Book of R - A First course in programming and statistics by TILMAN M. DAVIES

https://web.itu.edu.tr/~tokerem/The_Book_of_R.pdf

PRACTICAL

Title of the Paper: Practical in R Programming

Semester: V

Sub code : 21MVACP

List of Practical:

1. What will be the outcome of following commands when executed over the R console take any value of x.

i. $y=x^2$

ii. $z=y^3+x^2$

2. What is the correct outcome of the command? Take any value of vectors a, b,c, d,e and f

i. prod(c(a,b,c,d)^c(e,f))

ii. sum(c(a,b,c,d)^c(e,f))

iii. ceiling(c(a,b,c,d)^c(e,f))

3. Form the 3×3 matrix in the form $\begin{pmatrix} a & b & c \\ 1 & 2 & 3 \\ x & y & z \end{pmatrix}$

4. Find transpose of 2×2 matrix.

5. Obtain the different types of scatter plot for the given vector.