Advance Diploma Course in Statistical Software

(R- Software)

Third Year

Sem -I

1) Introduction to R

I. Introduction
II. R as a Statistical Software and language
III. Data types and arithmetic operators
IV. R preliminaries

2) Methods of Data Input

C – function

I. Seq – function
II. Scan function
III. Rep – function
IV. Data – frame function
V. Matrix function

3) Diagrammatic presentation

Standard plot functions, arguments to plot functions, low level plotting functions Bar diagram, Sub – divided bar diagram, multiple bar diagram, subdivided bar diagram, pie- diagram, stem and leaf plot.

4) Preparation of frequency table and graphical representation

Construction of frequency distribution table (for discrete and grouped data). Graphical representation- Rod and Spike graph, Histogram ,Frequency polygon Ogive curves.

5) Measures of central tendency and dispersion

Arithmetic Mean, Geometric mean, Harmonic mean, Median, Quartiles Deciles, Percentiles, Mode.

Interquartile range, Mean deviation about mean, Variance, Standard Deviation, Coefficient of variation.

Sem –II

6) Measures of Moments, Skewers and kurtosis.

Raw and central moments, Measures of Skewness, Measures of Kurtosis.

7) Probability and Probability Distribution.

Application of Binomial Distribution, fitting of Binomial distribution, Application of hyper geometric distribution, fitting of hyper geometric distribution, Poisson distribution.

8) Statistical Inference

I. Sampling distribution of sample mean
II. Estimation of Parameters
III. Plots to check normality
IV. Hypothesis testing, chi- square test, t- test, F- test
V. Goodness of fit tests.

Nature of Question Paper

Certificate Course in Statistical Software

Paper I and II

Total 100 Marks

Que. 1 Short Answer (Any Four)	20
Que. 2 Broad Questions (Two)	20
Que. 3 Short Notes (Any Four)	20

Practical Work

1) Short Questions	20
2) Broad Question	20
	Total Marks - 100

R- Software

Book Name	**Author Name**
R for Data Science	Hadley wickham
R programming for data science	Roger D peng
An introduction to statistical & Data sciences via R	Chester ismay & Albert Y.kim
R packages	Hadley wickham
Fundamental of Data visualization	Clause wilke
Hands- on Programming with R	Garrett Grolemund