বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY

Question Paper

B.Sc. General Examinations 2020

(Under CBCS Pattern)

Semester - III

Subject: STATISTICS

Paper: SEC 1-T

Statistical Analysis Using R

Full Marks : 40

Time : 2 Hours

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt any ***two*** questions from the following : 2×20=40

1. (i) When are the outputs Inf, -Inf, NAN and NA obtained in R? 5

   (ii) How can you obtain the simple linear regression of a variable on another variable in R? Give the interpretation of the output using the command stated. 5

   (iii) How can you load data into R from a notepad file and a csv file? 5

   (iv) Discuss how you can obtain a boxplot for a categorical data set in R. Also state how you can obtain a pie chart for such a data set in R. 5

2. (i) Give the command to create a numeric vector and a character vector in R. Give an example. 4

(ii) What is a data frame in R? When is it used? Give an example. 6

(ii) How can you obtain the probability mass function values of the following distributions in R: 4

a) Poisson distribution with a given rate parameter λ

b) Binomial distribution with given parameters n and p.

(iv) State the command to create a matrix in R. Give an example. Also state how you can multiply two matrices (conformable for multiplication). 6

3. (i) How can you obtain the histogram of a frequency distribution for a given number of classes in R? Also state the command to obtain a histogram using the breakpoints. 4

(ii) What are the capabilities of R programming? 6

(ii) Give the command to extract a subset from a vector. Explain with an example. 4

(iv) How can you obtain the different descriptive statistical measures of a numeric vector in R? 6

4. (i) How can you extract a submatrix from a matrix in R? 4

(ii) Describe the use of some standard mathematical functions in R. 6

(ii) Give the command to obtain the quotient and remainder of an integer. 4

(iv) Give the command to generate a random sample of size n from a normal distribution with a given mean and variance. Also generate another such random sample of same size and then obtain a scatter plot using the two samples. 6