



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY

Question Paper

B.Sc. Honours Examinations 2020

(Under CBCS Pattern)

Semester - III

Subject: STATISTICS

Paper: SEC1T

(Statistical Data Analysis using R)

Full Marks : 40

Time : 2 Hours

Candidates are required to give their answer 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. (a) Consider a vector $1:k$, where k is a positive integer. Write a R command that determines how many elements in the vector is exactly divisible by 3.
- (b) Construct a 2×2 data frame. How to add a row and a column to the data frame. Write a R program to count the number of NA values in a data frame column.
- (c) Evaluate the quadratic at each point in vector x , $ax^2 + bx + c$ for some given a, b, c .
- (d) How can a matrix in R transformed into a vector. 6+6+6+2=20

2. (a) Consider the following data on weights of 55 students

42, 74, 40, 60, 82, 115, 41, 61, 75, 83, 63, 53, 110, 76, 84, 50, 67, 65, 78, 77, 56, 95, 68, 69, 104, 80, 79, 79, 54, 73, 59, 81, 100, 66, 49, 77, 90, 84, 76, 42, 64, 69, 70, 80, 72, 50, 79, 52, 103, 96, 51, 86, 78, 94, 71.

Write a R program to construct a frequency distribution and draw the histogram. Give R command to calculate cumulative frequencies.

(b) What are the data types in R?

(c) Write a R program to create a matrix taking a given vector of numbers as input and define the column and row names. 12+2+6=20

3. (a) Use sample function to create a vector of size 100 from the integers 1, 2, ..., 10. Write a R programme to construct a frequency distribution of the data and draw bar graph.

(b) Write a R programme to calculate the mean, median and mode of the data in (a).

(c) Write a R programme to simulate a unbiased dice rolling. 10+4+6=20

4. (a) Write a R programme to read a data from .xlsx file. What is read.table function?

(b) Write a R programme to construct a $3 \times 2 \times 4$ array. How to extract a 3×2 matrix from the array?

(c) Write a R programme to draw the graph of the circle.

(d) How can you fit a Poisson distribution to a data on misprints using R?

5+5+5+5=20
