

B.Sc. (Honours) Examination, 2019
Semester-IV (CBCS)
Statistics
Skill Enhancing Compulsory Course : SECC-2
(Statistical Data Analysis Using R)

Time : 2 Hours

Full Marks : 25

Questions are of value as indicated in the margin

Answer **any five** questions

1. a. Consider the following function

```
f <- function(x) {  
  g <- function(y) {  
    y + z  
  }  
  z <- 4  
  x + g(x)  
}
```

If we execute following commands (written below), what will be the output?

z <- 10

f(4)

b. If I have two vectors x<- c(1,3, 5) and y<-c(3, 2), what is produced by the expression cbind(x, y)?

c. What does the 'pch' option to par() control?

3+1+1

2. Consider the following data:

Alpha 125.5 0

Beta 235.6 1

Beta 212.03 0

Beta 211.30 0

Alpha 265.46 1

File Name – Dataframe.csv

a. What commands will correctly read the above csv file with 5 rows in a data frame?

b. Write down the code which will select only the rows for which parameter are Alpha?

c. Write the R code for box plot based on alpha and beta values for each column. 1+2+2

3. a. When is it appropriate to use the which() function?

b. How do you install a package in R?

c. What are the different data types/objects in R?

1+2+2

4. a. What is a factor variable, and why would you use one?

b. How do you concatenate strings in R? Give an example

c. What are the disadvantages of R?

2+1+2

P.T.O.

(2)

5. Write an R code to find the sum of first n (to be given by the user) natural numbers. 5
6. Write an R code to construct a matrix with 5 rows that contain the numbers 1 up to 10. Also mention the role of the code "byrow" in this regard. How would you add a column to this matrix? 5
7. a. Write an R code to create a vector from 1 to 10.
b. Suppose we want to extract the values that only meet the condition 'is strictly superior to five'. What will be the R code.
c. Further, write the code to find numbers in between 4 and 7. 1+2+2
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