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UG/3rd Sem/STAT(G)/T/19

2019

B.Sc.

3rd Semester Examination

STATISTICS (General)

Paper - SEC-1T

STATISTICAL DATA ANALYSIS USING R

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full Marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

1. Answer any five questions :

2×5=10

(a) What are data types of vectors in R ?

(b) Write the outcome of : $\log(-1.4)$

(c) Write the outcome ?

$X < -c("a", "a", "a", "b", "b", "b")$

which (letters == "a")

[Turn Over]

- (d) What is difference between dataframe & matrix ?
- (e) If `x <-seq(4)` then print (x) given — ?
- (f) What is the memory limit of R ?
- (g) What are the use of commands `read.c&v()` and `read.table ()` in R ?
- (h) Write the command for transpose of a matrix.

2. Answer any *four* questions :

5×4=20

- a) Briefly describe the 4 data structures vector, list matrix and data frame in R.
- b) Write a R-programme to convert Fahrenheit temperatures to celsius temperatures for the following data (in Fahrenheit) 25, 26, ... 30.
- c) The following 5 observations are on October snow cover in Russia.

Year	Snow Cover
1970	6.5
1971	12.0
1972	14.9
1973	10.0
1974	10.7

Enter the data in a data frame in R.

(3)

- d) Generate a sample of size 10 from exponential (I) distribution in R.
- e) Generate matrix whose rows are permutation of numbers 1, 2, 3, 4.
- f) Give an example to read a CSV file in R. Write command to extract are column from it.

3. Answer any *one* question :

10×1=10

- (a) Obtain probability distribution of X where X is the number of sports showing when six-sided fair die is rolled. Simulate random samples of sizes 100, 200 & 500 and verify frequency definition of probability.
- b) Consider the following data in x and y

x	10	20	30	40	50	60	70
y	4.21	5.91	7.43	9.53	11.50	13.32	14.99

- find i) linear regression of y on x.
 - ii) obtain correlation.
 - iii) draw scatter plot and hence comment on the relationship between x and y.
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