

8. Write a R-code for the following :

- (i) Read the marks of 20 students in the subjects statistics, computers and mathematics through console.
- (ii) Create the data frame containing Roll No., Name, Marks in each subject and overall percentage of each student.
- (iii) Calculate the pairwise correlation between scores obtained in different subjects.

Plot scatter diagram(s) to show relation of scores obtained with respect to three subjects. 2×10=20

This question paper contains 4 printed pages]

29/11/19

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S. No. of Question Paper : 7841

Unique Paper Code : 32373902

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Name of the Paper : Statistical Data Analysis Using R

Name of the Course : B.Sc. (Hons.) Statistics : SEC

Semester : III

Duration : 2 Hours

Maximum Marks : 50

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt six questions in all.

Section A is compulsory.

Attempt any two questions each from

Section B and Section C.

Attempt all the questions using R.

Section-A

1. (a) For a given vector $x = c(7, 1, 2, 5, 4, 8, 9, 6)$, the values obtained by using `cummax(x)` are.....

P.T.O.

- (b) CRAN in R stands for.....
- (c) The graphical argument used to specify point shapes is.....
- (d) Write the output when

```
midx = c(10, 17, 25.5)
```

```
frequency = c(5, 2, 3)
```

```
x = rep(midx, frequency)
```

- (e) To read data from console in R, we use.....

5×1=5

2. (a) How do you extract data from a data frame defined in R ?
- (b) Write the arguments used in graphical representation of R for the line type and line width.
- (c) Distinguish the use of `cex.lab` and `cex.main` when taken as the arguments in a plot statement.
- (d) How can you use customized y -axis limits in a graphical representation ?
- (e) How does a vector differ from list in R ? 5×2=10

Section-B

3. Write R code to apply t -test for difference of means when the samples are drawn from same population at 10% level of significance. Interpret the results as obtained in R. Also calculate mean, variance, median and mode for both the samples used in the above t -test.
4. Given the frequency distribution x/f , using cumsum function draw both less than and more than ogives on the same plot. Also, locate median on the graph.
5. Discuss d , r , p , q functions of a family of distributions with respect to uniform distribution. 2×7.5=15

Section-C

6. Write R-code for revealing the effect of increasing the values of parameter lambda in a Poisson distribution.
7. Write a R-code for the following :
- (i) Fit the model $y = \beta_0 + \beta_1 x$ if for the given data (x, y) .
- (ii) Estimate y and residual vector.
- (iii) Create a data frame to store vectors x , estimated y and residual.
- (iv) Plot the fitted regression line and the given data (x, y) on the same plot.