

- (e) (i) Print the first, third and fifth rows.
- (ii) Sort the above sample.
- (f) Convert the above data frame into a matrix with object name 'consumers'. Also, determine the structure of it.
- (g) Add the row names : FY2012 FY2013 FY2014 FY2015  
FY2016 to the above dataframe.
- (h) Explain the command :

```
data1[seq(1, length(data1), 2)]
```

4. Do any *four* of the following :

$3 \times 4 = 12$

- (a) (i) Create the following data frame :

```
> bird
```

	Garden	Hedgerow
Blackbird	47	10
Chaffinch	19	3
Great Tit	50	0
Robin	9	3

- (ii) Plot a bar chart of above data.
- (iii) Alter the scale of the y-axis and add axis labels.

This question paper contains 4+2 printed pages]

Roll No.

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S. No. of Question Paper : 7229

Unique Paper Code : 62353505 J

Name of the Paper : Statistical Software R

Name of the Course : B.A. (Prog.) Mathematics : S.E.C

Semester : V

Duration : 2 Hours

Maximum Marks : 38

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

All questions are compulsory.

All commands should be written in software R.

1. Do any *five* of the following :  $5 \times 1 = 5$

State whether the following statements are true or false :

- (i) `rm()` command finds the defined variables.
- (ii) `colors()` and `colours()` commands give the same output.
- (iii) Quantile-Quantile plots are used for visualizing data in a straight line.
- (iv) `c(3 5 7 9)` gives a vector.

P.T.O.

(v) sample( ) command selects random elements from data.

(vi) ls.str( ) command finds the structure of all the defined objects.

2. Do any five of the following : 5x1=5

Fill in the blanks.

(i) .....command is used to make scatter plot.

(splot( ) / plot( ))

(ii) .....command can be used to view the current type of an object. (summary( ) / class( ))

(iii) names( ) command is used for viewing.....names. (rows/columns)

(iv) .....command is used to generate a sequence of 10 random numbers. (seq(10)/ rseq(10))

(v) Command for  $\cot^{-1}(x)$  is..... (acot(x)/ arccot(x))

(vi) .....command rearranges the items in a vector to be in order (sort( ), order( )).

3. Write the commands in R for the following : 2x8=16

(a) (i) Read data from the file "hybrid .txt" .

(ii) Using scan function, enter the following data :

Subject : Eng Sociology Science History

(b) (i) List the object starting with b or ending with t.

(ii) Save the commands in a file with name "commands."

Use data : 2 3 7 2 4 3 2 5 6 3 1 3 7 8; for question(c) and (d)

(c) (i) Display the values less than 4 and greater than 6.

(ii) Count the items in the above sample.

(d) (i) Create a contingency table.

(ii) Create a stem and leaf plot.

Consider the following dataframe 'data', for questions (e)-(g) :

data :	data 1	data 2	data 3
	23	25	34
	43	32	56
	23	65	21
	34	76	78
	32	67	32

(b) (i) Display the data frame :		
> rainfall		
Day	rain	
1	3	Mon
2	5	Tue
3	7	Wed
4	9	Thu
5	3	Fri

(ii) Plot above data, label the axes.

(iii) Enclose the whole plot in a bounding box.

(c) (i) Make a vector

data I : 3 5 7 6 5 7 3 3 8 4 2 7 1.

(ii) Display three quantiles 20%, 50% and 80%.

(iii) Display three quantiles by suppressing the

**headings.**

(iv) What is the use of `fivenum()` command ?

(d) (i) Display the data frame :

> fw

	count	Speed
Taw	3	5
Torridge	5	3
Ouse	7	8
Exe	9	4
Pit	3	9

(ii) Display the mean values of each row and column in above sample data.

(iii) Explain the following :

> apply (fw, 1, mean, na.rm = TRUE).

(e) (i) Make a vector

Data2: 3 3 8 4 2 7 1 5 7 2 8 7.

(ii) Create a histogram for above data.

(iii) Specify the breaks of bars at nos. 2, 5, 6, 9.

(iv) Color the bars and suppress the main title for the histogram.