

Name of Course : **CBCS B.Sc. Mathematical Sciences - II**  
 Unique Paper Code : **42353503**  
 Name of Paper : **SEC – Statistical Software - R**  
 Semester : **V**  
 Duration : **3 hours**  
 Maximum Marks : **38 Marks**

*Attempt any four questions. All questions carry equal marks.*

1. Fill in the blanks.( Do any five of the following )
  - a) \_\_\_\_\_ command is used to plot histogram (hist() / history()).
  - b) The Kolmogorov- Smirnov test is applied to compare \_\_\_\_\_ distributions (within 1 / 2 ).
  - c) The \_\_\_\_\_ command sorts the data (scan() / rank ( )).
  - d) For calling function we use \_\_\_\_\_ bracket ([ ] / ( )).
  - e) To rearrange data we use \_\_\_\_\_ command (sort() / order())
  - f) \_\_\_\_\_ command is used to verify if a given object 'X' is a matrix data object (is.matrix(X), class(X))
  
2. State whether the following statements are true or false:(Do any five of the following)
  - a)  $|X| + 9$  is  $\text{abs}(X) + 9$
  - b)  $\sqrt{7} + 4$  is  $\text{sq}(7) + 4$
  - c) You cannot perform sort ( ) command on entire dataframe.
  - d) The command for entering text using scan command is scan (what = 'character').
  - e) The dimnames( ) command shows the column names first.
  - f) The command for using default directory is getwd( ).
  
3. Insert the following data in an object “marks” in two different ways :

21, 24, 21, 25, 18, 19, 15, 13, 11, 09, 14

Read following data from a two column spread sheet. Explain the process step-by-step. And also write the out put

Internal_1	Internal_2
20	19
19	21
25	16
18	25
12	13
11	17

Write the input commands along with corresponding outputs to view the following objects as

Objects starting with ‘m’  
 Objects ending with ‘s’  
 Objects having the word ‘est’

for the objects “may”, “mark”, “marks”, “nest”, “nestle”, “restle”, “establish”

4. Write commands to create following two objects

Matrix Object: 'assignment'

	Assign_1	Assign_2	Assign_2
Student_1	15	16	24
Student_2	0	19	21
Student_3	25	0	25
Student_4	12	15	14

Data Frame Object: 'Final\_IA'

Name	Final_IA
Disha	19
Neha	18
Isha	24
Prusha	25

Write commands to evaluate Mean, Median, Maximum, and Minimum of the following data excluding last entry

8, 9, 5, 8, 4, 7, 6, 0, NA

5. Using R commands create the following table 'score':

Subject Name	English	Sociology	Geography	Economics
Raj	81	81	96	92
Riya	94	98	78	83
John	92	79	82	92
Athens	90	85	87	87
Christina	79	89	76	68

Create a box-whisker plot to compare the marks scored by students in all the four subjects. Also, colour it blue and add axis labels as 'Subjects' and 'Marks'. Represent the above data graphically through a bar chart with appropriate labels.

6. Generate a random sample of 20 numbers between 10 and 50. Find their average. Plot the density curve for this sample. Also create the histogram to view the sample graphically.