

Code No: MC1614/R16

MCAI Semester Regular/Supplementary Examinations, January-2018

**STATISTICAL PROGRAMMING WITH R**

**Time: 3 Hours**

**Max. Marks: 60**

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*Answer Any FIVE Questions  
All Questions Carry Equal Marks*

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1. a How basic arithmetic can be carried out in R? Explain with an example each. 6m  
 b What is a vector? How to create it? Create a vector X of elements 5, 2, -1, 7, 4, 8, 12 and from it create a vector Y containing elements of  $x > 4$  6m
2. a How a data frame is different from a list? Create a data frame of seven days in a week showing minimum temperatures on that day. 6m  
 b Write a R program to calculate the GCD of two numbers using recursive computation. 6m
3. a How user defined functions are created in R? Explain it with a sample function that returns sum of first n natural numbers where n is the input given by user. 6m  
 b What is the difference between NA and NULL values? How to handle them? 6m
4. List and explain various functions available in R for statistical distributions. 12m
5. a Discuss various linear algebraic operation on matrices in R. 6m  
 b How to create a box plot in R? What information does it represent? Compare it with histogram. 6m
6. How to plot pixels and lines along with legend in R? Illustrate with syntaxes and examples. 12m
7. What are T-tests? Give the comparison of one-sample T-test and Two-sample T-test with suitable example. How R supports these? 12m
8. a Define decision tree. What is the use of a decision tree? What is the function used in R to build a decision tree? Explain its parameters. 6m  
 b Give the functions in R that performs correlation and correlation in statistics 6m

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