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**Question Paper Code: 93C03**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Third Semester

Computer Science and Business System

19UCB303 - Computational Statistics

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- In which IDE we can interact with R? CO2- A  
(a) R studio                      (b) Console                      (c) GCC                      (d) Power shell
- Which function is used to combine the elements into a vector? CO2- A  
(a) C()                      (b) D()                      (c) E()                      (d) F()
- What is the meaning of "<-"? CO1- U  
(a) Functions                      (b) Loops                      (c) Addition                      (d) Assignment
- Identify the output of the following R code? CO2- A  

```
> m <- matrix(nrow = 2, ncol = 3)
> dim(m)
```

a) 3 2    b) 2 3    c) 2 2    d) 4 5  
(a) 3 2                      (b) 2 3                      (c) 2 2                      (d) 4 5
- Which function gives an error message if the desired package cannot be loaded. CO2- A  
(a) Dplyr                      (b) Require                      (c) Library                      (d) Sample
- \_\_\_\_\_ evaluate the cumulative distribution function for a Normal distribution. CO1- U  
(a) dnorm                      (b) rnorm                      (c) pnorm                      (d) rpois
- Which of the following is lattice command for producing boxplots? CO2- A  
(a) plot()                      (b) bwplot()                      (c) xyplot()                      (d) barlm()

8. \_\_\_\_\_ function carries out a chi-square test. CO1- U  
 (a) chisq.test() (b) t.test() (c) prop.test() (d) fisher.test()
9. What plot(s) are used to view the linear regression? CO1- U  
 (a) Scatterplot (b) Box plot  
 (c) Density plot (d) Scatterplot, Boxplot, Density plot
10. Function used for linear regression in R is \_\_\_\_\_ CO1- U  
 (a) lm(formula,data) (b) lr(formula, data)  
 (c) lrm(formula, data) (d) regression.linear(formula, data)

PART – B (5 x 2= 10 Marks)

11. What are the advantages of R? CO1- U
12. List the miscellaneous operator in R CO1 -U
13. List any five math function in R. CO1- U
14. What is meant by Visualization? CO1- U
15. What is meant by regression? CO1-U

PART – C (5 x 16= 80 Marks)

16. (a) Discuss Vectors in R with Suitable Example. CO1-U (16)  
 Or  
 (b) Explain Data Frame in R with appropriate example CO1-U (16)
17. (a) Explain operators and Decision Statements and apply those concepts to write R Program to get the first 10 Fibonacci numbers. CO2- App (16)  
 Or  
 (b) Explain Matrices and Develop a R Program to create a matrix from list of given vectors. CO2- App (16)
- 18 (a) Develop R Program to implement Data Sorting with appropriate Example. CO2- App (16)  
 Or  
 (b) Develop a R Program to implement all Set Operations in R and to find Cumulative Sum and Product for the given vector values using R Function . CO2- App (16)

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|-----|-----|---|--------|------|
| 19. | (a) | Explain Scatter Plot and Box Plot with an Example   | CO1- U | (16) |
|     |     | Or  |        |      |
|     | (b) | Explain Binomial and Normal distribution in detail. | CO1- U | (16) |
| 20. | (a) | Explain Regression Analysis with an example.        | CO1- U | (16) |
|     |     | Or  |        |      |
|     | (b) | Explain Non linear models in detail.                | CO1- U | (16) |

