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Reg. No.

Question Paper Code

12095

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Third Semester

Electronics and Communication Engineering

20ECPW301 - R PROGRAMMING WITH LABORATORY

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|---|-------------------------------|
| 1. Define vector with suitable Example. | 2,K1,CO1 |
| 2. Write a R Program to print the numbers from 1 to 20. | 2,K2,CO1 |
| 3. State the method of passing arguments to a function. | 2,K1,CO2 |
| 4. Write the code to print the odd numbers alone from the count 0 to 20. | 2,K2,CO2 |
| 5. What are the different parameters evaluated while using summary () function? | 2,K2,CO3 |
| 6. Interpret the output of the order(c(5,23,99,12)). | 2,K2,CO3 |
| 7. State the differences between Covariance and Correlation. | 2,K2,CO4 |
| 8. Define simple linear Regression. | 2,K1,CO4 |
| 9. State the importance of Machine learning in data analytics and its types. | 2,K2,CO6 |
| 10. Define Reinforcement learning. | 2,K1,CO6 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Elaborate the following R objects with examples: a) Vector b) data frame c) matrix d) list. 13,K2,CO1
- OR**
- b) Illustrate the use of 'cbind () and rbind ()' function for framing the 3X3 matrices with examples. 13,K2,CO1
12. a) Explain in detail concept of recursion in functions with examples. 13,K2,CO2
- OR**
- b) Explain in detail the looping statements in R with examples. 13,K2,CO2
13. a) Write the algorithm and program for the binary search process in R. 13,K2,CO3

OR

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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b) Write a R program with algorithm to implement quick sort on the vector given (5, 5, 4, 12, 13, 3, 8, 88). 13,K2,CO3

14. a) (i) Write short notes on survival analysis. 6,K2,CO4
(ii) Explain Non- linear models with example. 7,K2,CO4

OR

b) Develop the prediction model using linear regression for finding relative relation among variables in the case given. Write a R script to get a linear equation $y=mx+c$ form for the heart weight and body weight in cats dataset. 13,K3,CO4

15. a) (i) List the different types clustering. Write about KNN algorithm. 7,K2,CO6
(ii) Write a R script to cluster the mtcars dataset using KNN algorithm. 6,K2,CO6

OR

b) Brief the reinforcement learning in R with suitable example. 13,K2,CO6

PART - C (1 × 15 = 15 Marks)

16. a) Assume the mtcars() dataset . sUse ggplot package and different aesthetic values to plot mpg, hp in X and Y axis respectively. Plot cyl using shapes and ,am using colour variations in R. 15,K2,CO5

OR

b) Explain briefly about R function used in Graphs and plots. 15,K2,CO5