Reg. No.												

Question Paper Code	12425

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 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

		Marks, K-Level, CO
1.	Build the R code to print the numbers from 1 to 20.	*2,K2,CO1*
2.	Write the syntax of vector with a suitable example.	*2,K2,CO1*
3.	Illustrate the concept of recycling with appropriate examples.	*2,K2,CO2*
4.	Infer the output for floor (-3.5) and ceiling (-3.5).	*2,K2,CO2*
5.	List the differences between the set difference and symmetrical difference in R.	*2,K1,CO3*
6.	List out the differences between scan () and readline(), with suitable examples.	*2,K1,CO3*
7.	State the syntax for generalized linear model in R.	*2,K1,CO4*
8.	Show the syntax for density plot of binomial distribution with the parameters involved in it.	*2,K1,CO4*
9.	Compare the locator () function and text () function. Give suitable examples.	*2,K2,CO5*
10.	Show the syntax to plot the points x = (3, 2, 1, 4) and y = (3, 1,8, 2) and give the coordinate pairs plotted.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) Construct a R program to find the Factorial of a given number.	*5,K2,CO1*
		(ii) Illustrate with the algorithm the R code to find the Median and Mode of the given vector z= (3,2,4,11,6,2,4,1,2).	*8,K2,CO1*
		OR	
	b)	(i) Summarize the concept of data frame form a table that stores the employer details of 10 employees with emp.Id, emp.name, emp.salary, emp.age as the columns.	*7,K2,CO1*
		(ii) Demonstrate how to generate a 3 X 3matrix and access the 2nd row elements and find the mean.	*6,K2,CO1*

12. a) Explain in detail the looping statements in R with examples. *13,K2,CO2*

OR

b) Explain in detail with examples the concept of recursion in functions. *13,K2,CO2*

13. a) Outline the algorithm and program for the binary search process in R to search from the vector (20, 11, 3, 2,9, 65) the number 9. *13,K2,CO3*

OR

b) Consider the current market value of adidas and Nike brands to be 50% each. Illustrate the market value of the brands if the transition matrix is given as below. *13,K2,CO3*

$$\begin{pmatrix} 0.4 & 0.6 \\ 0.3 & 0.7 \end{pmatrix}$$

14. a) Summarize any one survival analysis method with suitable dataset and R code. *13,K2,CO4*

OR

b) Explain Normal Distribution and Binomial Distribution with suitable examples. *13,K2,CO4*

15. a) Assume that we have marks of 20 students of two different sections of Class 10th. X is class 10 section A and Y is class 10 section B. *13,K2,CO5*
X = 40, 15, 50, 12, 22, 29, 21, 35, 14, 15,49, 25, 41, 43, 30, 20, 48, 25, 18, 23
Y = 41, 42, 32, 14, 42, 27, 13, 50, 33, 22, 31, 30, 49, 25, 40, 39, 14, 37, 15, 50.
Using Plot() function create density plot X. Add the lines plot of Y. Add the legend for sec A and B to differentiate the density plot.

OR

b) Make use of suitable R functions and show graphically different plots in R. Give the syntax of each with examples. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Compare the linear regression, logistic regression and multivariable regression. Explain with suitable examples. *15,K2,CO6*

OR

b) With suitable examples, outline the K-Mean clustering algorithm and discuss the pros and cons of the same. *15,K2,CO6*