Reg. No.												

Question Paper Code	11929

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

Fifth Semester

Information Technology

20ITPW501 - STATISTICAL ANALYSIS USING R PROGRAMMING WITH LABORATORY

(Regulations2020)

(Statistical Table needs to be provided)

Duration: 3 Hours | Max. Marks: 100

PART-A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List the Boolean operators in R.	2,K1,CO1
2.	Mention set operations in R.	2, K1,CO1
3.	Write about plot function.	2, K1,CO2
4.	Find median and mode of following numbers: 12,13,11,10,9,11,7,11,10,15,16,11.	2, K2,CO2
5.	Identify the use of par() function in R.	2, K2,CO3
6.	Write the syntax of plot().	2, K1,CO3
7.	Compare Bartlett's test and Kruskal-Wallis test.	2, K2,CO4
8.	What is correlation Analysis?	2, K1,CO4
9.	Define Multiple Regression.	2, K1,CO5
10.	How can you produce co-relations and covariances in R?	2, K2,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the different data structures in R.	13,K2,CO1
		OR	
	b)	Explain reading from a text file with suitable example.	13,K2,CO1
12.	a)	In a sample of 1000 cases, the mean of certain test is 14 and standard deviation is 2.5. Assuming the distribution to be normal, find (i) How many students score between 12 and 15? (ii) How many score above 18? (iii) How many score below 18?	13,K2,CO2
		OR	
	b)	Write about Q-Q plot and histograms with examples. Explain its importance.	13,K2,CO2

13. a) Explain the importance of boxplot, strip charts and bar plots with example. *13,K2,CO3*

OR

b) Explain the t-test with suitable example. *13,K2,CO3*

14. a) What is a One Sample T Test? Explain with an example, how To Calculate a Test Statistic and accept or reject the null hypotheses with an example program. *13,K3,CO4*

OR

b) The students taught by 3 different methods gave the following performance(marks): *13,K3,CO4*

a) 19,9,12,16,7,14,11
b) 8,13,3,17,15
c) 14,11,10,9,15,16

Calculate the analysis of variance

15. a) Fit a straight line Y=a+bx to the following data *13,K2,CO5*

X	12	17	19	25	32	38	43
Y	65	78	82	92	90	97	100

Also estimate Y when X=35.

OR

b) Outline the logistic regression with suitable example. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Fit polynomial regression for the below data set using R write R code for data Visualization, Regression Fit and Draw the graphical representation . *15,K3,CO6*

Position	Level	Salary
Business Analyst	1	45000
Junior Consultant	2	50000
Senior Consultant	3	60000
Manager	4	80000
Country Manager	5	110000
Region Manager	6	150000
Partner	7	200000
Senior Partner	8	300000
C-Level	9	500000
CEO	10	1000000

OR

b) What does interaction mean in a two-way ANOVA? Explain how Interaction is calculated in two-way ANOVA with example. *15, K3, CO6*