

Reg. No.:



Y7583

Name:

University of Kerala

Fourth Semester FYUGP Degree Examination, May 2026

Skill Enhancement Courses

STATISTICS

UK4SECSTA202 - STATISTICAL ANALYSIS USING R

Academic Level: 200-299

2024 Admission

Time: 1 Hour

Max. Marks: 28

Part A. 4 Marks ,Time 5 Minutes (Cognitive Level :Remember(RE)/Understand(UN))Objective Type 1 mark each,
Answer all questions

Qn No.	Question	CL	CO
1	The factor() is used for	RE	1
2	Which function is used to find the mean in R?	RE	2
3	The value of correlation coefficient between two variables is calculated as +0.875. Then we can conclude that the correlation between the variables is	UN	4
4	When the values of two variables move in the same direction, correlation is said to be Options : A)Linear B)Non-linear C)Positive D)Negative	UN	4

Part B. 8 Marks ,Time 15 Minutes (Cognitive Level :Understand(UN)/Apply(AP))Short Answer 2 marks each, Answer all questions

Qn No.	Question	CL	CO
5	Explain how quantile() helps in understanding the distribution of data.	UN	2
6	Write the form of a simple linear regression model. Write the R syntax for constructing a simple linear regression model in R.	UN	4
7	Write the R syntax to create a sequence of numbers from 1 to 30 with an interval of 6 and display it.	AP	1
8	Write the R syntax to find the interquartile range (IQR) of $x = c(3, 6, 9, 12, 15, 18, 21)$.	AP	2

Part C. 16 Marks ,Time 40 Minutes (Cognitive Level :Apply(AP)/Analyse(AN)/Evaluate(EV))Long Answer 4 marks each, Answer all questions choosing among options* within each question

Qn No.	Question	CL	CO												
9	A) For the data 1,5,8,10,12,15 write R code to compute mean and variance using appropriate functions. OR B) For the data 3,6,9,12,15,18,21 write R code to sort the data and compute the variance from the mean.	AP	2, 2												
10	A) Write the R code to create a pie chart of expenditure pattern of a family given in the following table. <table><thead><tr><th>Items of Expenditure</th><th>Expenditure in ₹</th></tr></thead><tbody><tr><td>Food</td><td>9000</td></tr><tr><td>Clothing</td><td>4000</td></tr><tr><td>Rent</td><td>6000</td></tr><tr><td>Light and fuel</td><td>2000</td></tr><tr><td>Miscellaneous</td><td>4000</td></tr></tbody></table> OR B) The following R code is used to create a histogram: <pre>claims <- c(10,12,15,18,20,22,25,30,35,40)</pre> <pre>hist(claims, breaks=3, col="gray")</pre> Analyse how the choice of breaks=3 influences the representation of the data. Modify the code to better reflect the distribution and explain your reasoning.	Items of Expenditure	Expenditure in ₹	Food	9000	Clothing	4000	Rent	6000	Light and fuel	2000	Miscellaneous	4000	AN	3, 3
Items of Expenditure	Expenditure in ₹														
Food	9000														
Clothing	4000														
Rent	6000														
Light and fuel	2000														
Miscellaneous	4000														
11	A) The following dataset is given: X = (2, 4, 6, 8, 10) Y = (1, 3, 5, 7, 9) Write an R program to compute covariance and correlation. Interpret the results obtained: covariance = 20, correlation coefficient = 1. Evaluate whether covariance alone is sufficient to	EV	4, 2												

Qn No.	Question	CL	CO
	describe the relationship. OR B) For datasets A = c(15, 25, 35, 45, 55) and B = c(18, 28, 38, 48, 58), write R commands to compute and compare the coefficient of variation.		
12	A) Develop an R script using the data 1,3,5,7,9 to perform arithmetic operations (sum, mean) and logical operations (values greater than 4). OR B) Construct an R program for student data: Name = ("A", "B", "C", "D"), Marks = (27,31,40,25) to organize it and filter students scoring above 20.	CR	1, 1