Reg. No.: .....

Name: .....

University of Kerala

U9157

Second Semester FYUGP Degree Examination, April 2025

Discipline Specific Core Course

STATISTICS

UK2DSCSTA105 - STATISTICAL TOOLS FOR DATA ANALYSIS

Academic Level: 100-199

Time: 1 Hour 30 Minutes(90 Mins.) **Max. Marks: 42**

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	If the index number of an year is 80. This means there is a 20% decrease from base year. Say True or False.	RE	4
2	The term regression was introduced by …..	RE	2
3	'The most suitable average for index number is median' say True or False	UN	4
4	The sign of the Correlation is determined by the --------	UN	2
5	When we have to predict or estimate Y for a given value of X, we use the regression line of ___	UN	3
6	"In a standard normal distribution mean = 1 and variance = 0". Say True or False ?	UN	1

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Why fishers index number is considered as an ideal index number ?	UN	4
8	What is the use of regression?	UN	3
9	If price relative is 140 and price of a commodity in the base year is Rs 60. Find the price in the current year	AP	4
10	Explain the difference between Pearson's correlation coefficient and Spearman's rank correlation coefficient. When would it be more appropriate to use Spearman's rank correlation instead of Pearson's correlation?	AP	2

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO
11	A) A psychological test for anxiety follows a normal distribution with a mean of 50 and a standard deviation of 10. Determine the percentage of individuals score below 40? OR B) Compute the Fisher's Ideal Price Index number for the following data	AP	1, 4

Commodity	Price (2020)	Quantity (2020)	Price (2024)	Quantity (2024)
X	10	5	12	6
Y	15	8	18	7
Z	20	10	25	9

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Qn No.	Question	CL	CO
12	A) The following data represents the number of hours of exercise and blood pressure. Hrs.:. 1 2 3 4 5 BP (Systolic): 140 130 120 110 100. Explain the nature of relationship between time spent on exercise and blood pressure using suitable statistical analysis. OR B) If 3X+5Y=11 and 7X+Y=15 are the two regression lines, find the correlation coefficient between X and Y.	AN	2, 3
13	A) Evaluate the key characteristics of the normal curve and express how the probability distribution of a normal variable is mathematically represented. OR B) Give a situation to use Spearman's rank Correlation instead of Pearson's Correlation ?	EV	1, 2
14	A) Develop a real-life scenario where two events are mutually exclusive and another where two events are independent. Explain why they fit these definitions. OR B) Develop a real-life economic scenario where constructing an index number is essential. Describe the steps and methods used to build and interpret it.	CR	1, 4