



U7743

Reg. No.:



Name:.....

University of Kerala

First Semester Degree Examination, November 2024

Four Year Under Graduate Programme

Discipline Specific Core Course

STATISTICS

UK1DSCSTA108 Fundamentals of Statistics

Academic Level: 100-199

Time: 1½ Hours**Max.Marks:42****Part A.**

Answer All Questions, Objective Type. 1 Mark Each.

(Cognitive Level: Remember/Understand)

6 Marks. Time: 6 Minutes

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
1.	Give any one source of primary data	Understand	CO 1
2.	The process of arranging data into rows and column is called -----	Remember	CO 1
3.	The geometric mean of 2,4,8,16 is -----	Understand	CO 2
4.	If mean >Median>Mode, then the skewness is	Remember	CO 2
5.	Probability of the sample space is -----	Remember	CO 3
6.	Say TRUE or FALSE: Mutually exclusive events are always independent	Understand	CO 3

Part B.

Answer All Questions , Short Answer. 2 Marks Each.

(Cognitive Level: Understand/Apply)

8 Marks. Time: 24 Minutes

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
7.	The mean and median of a frequency distribution are 23.2 and 25.5 respectively. Find the approximate value of its mode	Apply	CO 2
8.	Define coefficient of variation. Give its use	Apply	CO 2
9.	Explain statistical regularity. What are its demerits	Understand	CO 3
10.	If A and B are independent, then show that A^c and B^c are independent	Understand	CO 3

Part C.

Answer all 4 Questions, choosing among options within each question.
Long Answer. 7 marks each. (Cognitive Level: Apply/Analyse/Evaluate/Create)
28 Marks. Time: 60 Minutes

Qn. No.	Question	Cognitive Level	Course Outcome (CO)																
11.	A. The following data gives the frequency distribution of the wages of 72 labours in a factory. Find the mean deviation about the mean Wage : 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 Labours: 2 22 19 14 3 4 6 1 1 OR B. Calculate the quartile deviation for the following data of annual income of families in thousands of rupees. Income : <499 500-999 1000-1999 2000-2999 >3000 No.of families: 5 25 40 20 10	Analyse	CO 2																
12.	A. The sales of two salesman A and B of a company over a sample of days were as follows (in thousands of rupees.) A: 5.5 2.5 6.0 3.5 4.5 5.0 5.0 4.0 B: 4.5 2.0 3.5 2.5 4.0 5.0 2.5 4.0 Which salesman is more consistent in his work? OR B. Calculate Bowley’s coefficient of skewness for the following data. <table border="1"><tr><td>Observation</td><td>15</td><td>25</td><td>35</td><td>45</td><td>55</td><td>65</td><td>75</td></tr><tr><td>Frequency</td><td>3</td><td>9</td><td>6</td><td>12</td><td>4</td><td>8</td><td>2</td></tr></table>	Observation	15	25	35	45	55	65	75	Frequency	3	9	6	12	4	8	2	Evaluate	CO 2
Observation	15	25	35	45	55	65	75												
Frequency	3	9	6	12	4	8	2												
13.	A. Explain pairwise independence and mutual independence. Prove or disprove “Pairwise independence implies mutual independence OR B. Define conditional probability. Show that conditional probability is a probability	Apply	CO 3																
14.	A. A continuous random variable X has p.d.f given by $f(x)=3x^2$, $0 \leq X \leq 1$. Find a and b such that (i) $P(X \leq a)=P(X > a)$ (ii) $P(X > b)=0.05$ OR B. Let X be a continuous random variable with pdf $f(x)=\theta e^{-\theta x}$, $x \geq 0$, $\theta > 0$, then find the mgf of X and hence obtain the variance of X	Apply	CO 4																