U7654

Reg. No.: .....

Name:.....

University of Kerala

First Semester Degree Examination, November 2024

Four Year Under Graduate Programme

Multi Disciplinary Course

STATISTICS

UK1MDCSTA102 SURVEY DESIGNS AND ANALYSIS FOR SOCIAL SCIENCES

Academic Level: 100-199

Time:1 Hour **Max.Marks:28**

Part A.

Answer All Questions Objective Type. 1 Mark Each.

(Cognitive Level: Remember/Understand)

4 Marks. Time: 5 Minutes

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
1.	_____ sampling ensures that every subset of a given size has an equal chance of being selected from the population.	Remember	CO1
2.	The middle most value in a dataset when is called the _____.	Remember	CO2
3.	Which measure of skewness is based on the difference between the mean and median? A) Quartile Deviation B) Pearson's Coefficient of Skewness C) Coefficient of Variation D) Kurtosis	Understand	CO2
4.	A schedule or questionnaire is a tool used to collect __from respondents in a survey.	Understand	CO1

Part B.

Short Answer. 2 Marks Each. Answer All Questions

(Cognitive Level: Understand/Apply)

8 Marks. Time: 15 Minutes

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
5.	Discuss the steps involved in constructing a boxplot for a population mean.	Understand	CO3
6.	Explain the difference between a parameter and a statistic, with examples.	Understand	CO3
7.	Calculate the coefficient of variation for the dataset: 10, 20, 30, 40, 50.	Apply	CO2

8.	Explain how the K-S test is used to test for normality in a dataset.	Apply	CO3

Part C.

Answer all 4 Questions, choosing among options within each question.

(Long Answer. 4 Marks Each.Cognitive Level: Apply/Analyse/Evaluate/Create).

16 Marks. Time: 40 Minutes

<table>
<tr><th>Qn. No.</th><th>Question</th><th>Cognitive Level</th><th>Course Outcome (CO)</th></tr>
<tr><td>9.</td><td>A) Calculate median and mean deviation about mean
23,17,21,25,20,18,21,24
OR
B) Calculate SD
23,17,21,25,20,18,21,24</td><td>Apply</td><td>Co2</td></tr>
<tr><td>10.</td><td>A)Two different teaching methods are used in two classrooms. At the end of the year, the test scores of a large sample of students from both classrooms are collected. Describe how to determine if there is a significant difference in the average scores between the two groups using a two-sample Z-test.
OR
B) B. A sleep researcher claims that the average amount of sleep an adult gets per night is 7.5 hours. To test this claim, a sample of 20 adults is surveyed, and their average sleep duration is recorded. How would you use a one-sample t-test to determine if the actual average sleep duration differs from 7.5 hours?</td><td>Evaluate</td><td>CO3</td></tr>
<tr><td>11.</td><td>A) Analyze the four sampling methods: Simple Random Sampling, Systematic Sampling, Stratified Sampling, and Cluster Sampling. In what situations is each method most effective?
OR
B) Analyse different sample selection methods, which one is more reliable</td><td>Analyze</td><td>CO1</td></tr>
<tr><td>12.</td><td>A) Draw boxplot for the given data
12,14,14,16,17,19,21,21,21,23
OR
B) Draw Histogram and state the conclusion about the symmetry of the data
<table>
<tr><td>class</td><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td><td>50-60</td></tr>
<tr><td>f</td><td>2</td><td>7</td><td>14</td><td>12</td><td>6</td><td>1</td></tr>
</table></td><td>Create</td><td>CO3</td></tr>
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