



U8108

Reg. No.:

Name:.....

**University of Kerala**

First Semester Degree Examination, November 2024

Four Year Under Graduate Programme

Multi Disciplinary Course

STATISTICS

UK1MDCSTA101 EXPERIMENTAL DESIGNS FOR SCIENCE

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.	Various objects of comparison in a comparative experiment are termed as	Remember	CO1
2.	For a positively skewed data, what is the possible relationship between mean and mode? (a) mean > mode (b) mean = mode (c) mean < mode (d) either (a) or (c)	Remember	CO2
3.	The sum of deviations of a set of n observations from their mean is----- (a) n (b) 1 (c) -1 (d) none of these	Understand	CO2
4.	The measure of central tendency that is the most frequently occurring value in a dataset is called the _____.	Understand	CO2

Part B.

Answer All Questions Short Answer. 2 Marks Each.

(Cognitive Level: Understand/Apply)

8 Marks. Time: 15 Minutes

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
5.	What do you understand by local control?	Understand	CO1
6.	Calculate the median of the observations: 12, 15, 16, 10, 8, 11, 12, 16, 18, 15, 17, 20	Apply	CO2
7.	What are the major demerits of mean deviation as a measure of dispersion?	Understand	CO2
8.	Distinguish between type I and type II errors	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

Qn. No.	Question	Cognitive Level	Course Outcome (CO)												
9.	A. Find the AM and QD 23,27,36,31,32,32,43,17,21,11,21 OR B. Find the SD 23,27,36,31,32,32,43,17,21,11,21	Apply	CO2												
10.	A. A nutritionist wants to compare the average blood sugar levels between two groups of patients: one group follows a new diet plan and the other group follows the standard diet. How would you use a two-sample t-test to analyse the results? OR B. A researcher wants to compare the average blood pressure levels of patients following three different types of exercise routines: aerobic exercises, strength training, and yoga. How would you use ANOVA to determine if there is a significant difference in the average blood pressure levels among the three groups?	Analyze	CO3												
11.	A. Find the mean deviation about mean and sd 12,14,15,21,20,12,8,11,29,11,24,15,12 OR B. Decide which one is more consistent:- cost of tea or coffee (cost for the last five years is given in the table) <table><tr><td>Tea</td><td>123</td><td>134</td><td>156</td><td>172</td><td>190</td></tr><tr><td>Coffe</td><td>216</td><td>223</td><td>216</td><td>232</td><td>210</td></tr></table>	Tea	123	134	156	172	190	Coffe	216	223	216	232	210	Evaluate	CO2
Tea	123	134	156	172	190										
Coffe	216	223	216	232	210										
12.	A. Explain RBD with an example. OR B. Explain CRD with an example	Apply	CO1												