K25FY3411 Pages: 2 Reg No:.....
Name:.....

Third Semester FYUGP Degree Examination NOVEMBER 2025

KU3DSCSTA222 - STATISTICAL INFERENCE

2024 Admission onwards

Time : 1.5 hours Maximum Marks : 50

Section A

Answer any 6 questions. Each carry 2 marks.

1. What are the limitations of sampling?
2. Define population and sample.
3. Define standard error. What is the standard error of sample mean?
4. Explain the concept parameter and statistic.
5. Define point estimation.
6. Define composite hypothesis.
7. When will you apply Student's t test?
8. Paired t-test is applicable only when the observations are .....

Section B

Answer any 4 questions. Each carry 6 marks.

9. Define consistency and efficiency of the estimators.
10. Explain the concept of the unbiased and consistent estimator.
11. Describe the following:
(a) Type I error (b) Type II error (c) Significance level and (d) Power of the test.
12. A sample of 10 measurements of diameter of a sphere gave a mean 4.38 inches and standard deviation 0.06 inches. Can it be assumed that the mean of the population is 4.45 inches. Use 5% level of significance.
13. Following data gives the result of model and final examinations of a set of students. Test whether there is any association between results of model examination and final examinations at 5% level of significance.
14. Five hundred students in a school were graded according to their IQ and economic con- ditions of their home in a 2X2 table for testing the association between them. Write (a) null hypothesis (b) test statistics (c) degrees of freedom.

Model exam	**University Final exam**	
	Pass	Fail
Pass	605	135
Fail	195	65

Section C

Answer any 1 questions. Each carry 14 marks.

15. Explain the principal steps in sample survey.

16. Define chi-square, t and F statistics. What are the uses of these statistics? Explain the relationship among them.