



K22U 1583

Reg. No. : .....

Name : .....



**IV Semester B.Sc. Degree CBCSS (OBE) Regular/Supplementary/  
Improvement Examination, April 2022  
(2019 Admission Onwards)**

**COMPLEMENTARY ELECTIVE COURSE IN STATISTICS  
4C04STA(G&P) : Inferential Statistics**

Time : 3 Hours

Max. Marks : 40

**Instruction : Use of calculators and statistical tables are permitted.**

**PART – A  
(Short Answer)**

Answer **all** questions.

**(6×1=6)**

1. Define the term 'statistic'.
2. Define a consistent estimator.
3. What do you mean by confidence interval estimation ?
4. Define a null hypothesis.
5. How do you define a small sample test ?
6. Define F-statistic.

**PART – B  
(Short Essay)**

Answer **any 6** questions.

**(6×2=12)**

7. What are the desirable properties of a good estimator ?
8. Obtain the 95% confidence interval for the proportion of a population.
9. Obtain the two types of errors associated to a statistical hypothesis.
10. Explain the role of standard error in testing hypothesis problems.
11. Distinguish between one tail and two tailed tests.
12. What are the applications of a t test ?
13. Define Mann-Whitney U tests.
14. Explain the technique of one-way classified ANOVA.

P.T.O.



## PART – C

## (Essay)

Answer **any 4** questions.

(4×3=12)

15. Define the efficiency of an estimator. Give an example.
16. Obtain the 95% confidence interval for the difference of the means of two populations.
17. Explain simple and composite hypothesis with examples.
18. Explain goodness of fit.
19. A coin is tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is unbiased.
20. Outline the structure of one-way ANOVA table.

## PART – D

## (Long Essay)

Answer **any 2** questions.

(2×5=10)

21. A random sample of size 16 has 53 as mean. The sum of squares of deviations taken from mean is 135. Obtain the 99% confidence limits for the mean of the population.
22. Suggest a criterion for finding the most powerful tests.
23. A drug is given to 10 patients and the increments in their blood pressure were recorded to be 3, 6, -2, 4, -3, 4, 6, 0, 0, 2. Is it reasonable to believe that the drug has no effect on change of blood pressure ?
24. The three samples below have obtained from normal populations with equal variances. Test the hypothesis that the sample means are equal.

Sample I	Sample II	Sample III
8	7	12
10	5	9
7	10	13
14	9	12
11	9	14