



K26U 1051

Reg. No. : .....

Name : .....

IV Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary/  
Improvement) Examination, April 2026  
(2020 to 2023 Admissions)

COMPLEMENTARY ELECTIVE COURSE IN STATISTICS FOR B.SC.  
GEOGRAPHY/PSYCHOLOGY  
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 6 questions.

(6×1=6)

1. Define parameter.
2. What are the desirable properties of a good estimator ?
3. What do you mean by confidence interval ?
4. Define composite hypothesis.
5. Define test statistic.
6. State any two assumptions of analysis of variance.

PART – B  
(Short Essay)

Answer any 6 questions.

(6×2=12)

7. What is a point estimate ?
8. Obtain the 95% confidence interval for the mean of a population with known standard deviation.

P.T.O.



9. Define two types of errors.
10. What is the role of standard error in testing of hypothesis ?
11. Define significance level and power of a test.
12. What are the assumptions of t-test ?
13. Define Mann-Whitney U-test.
14. What are the importance of chi-square test ?

PART – C  
(Essay)

Answer **any 4** questions.

(4×3=12)

15. Define Consistent estimator. Give an example.
16. Distinguish between Large sample and Small sample tests illustrating by suitable examples.
17. What is the difference between parametric and non-parametric test ?
18. Explain the terms (1) Null hypothesis (2) Level of significance (3) Critical region.
19. Two random samples 8 and 11 drawn from two normal populations are characterized as follows :

Sample size	Sum of observations	Sum of squares of observations
8	9.6	61.52
11	16.5	73.26

Examine whether the 2 sample came from population having the same variance ( $\alpha = 0.01$ ).

20. A coin is tossed 10,000 times and it turns up head 5195 times. Discuss whether the coin may be regarded unbiased ( $\alpha = 0.05$ ).



PART – D  
(Long Essay)

Answer any 2 questions.

(2×5=10)

21. Suppose in a survey of 400 people from one city, 188 preferred brand A soap, to all others and in a sample of 500 people from another city 210 preferred the same product. Prepare 95% confidence Interval for  $p_1 - p_2$  where  $p_1$  is the proportion preferring brand A soap in the first city and  $p_2$  be the proportion preferring brand A soap in the 2nd city.
22. The nicotin content in milligrams of 2 samples of tobacco were found to be as follows :
- Sample A** : 24, 27, 26, 23, 25
- Sample B** : 29, 30, 28, 31, 22, 36
- Can we conclude that the two samples came from the normal population having the same mean ?
23. Explain Chi-square test for (a) goodness of fit. (b) Independence of attributes.
24. Distinguish between one way and two-way classification models and explain the procedure followed for carrying out analysis of variance.