

**(STA N 3306)**  
**B.Sc. Degree (CBCS) Examinations**  
FEBRUARY- 2022  
EXAMINATION AT THE END OF III SEMESTER  
PART - II STATISTICS  
**STATISTICAL INFERENCE**

TIME : Three hours

Maximum : 60 Marks

**SECTION-A**

Answer any FIVE of the following questions

5 x 4 = 20M

1. Define Parameter Sample Statistic
2. Define t distribution and Write its properties
3. State Neymann Factorization theorem
4. Explain the concept of interval estimation
5. Explain Type I and Type II errors
6. Explain (i) Critical region and (ii) Level of Significance
7. Explain large sample test procedure for single proportion
8. Explain about F test
9. Explain run test for randomness
10. Write the differences between parametric and non parametric tests

**SECTION-B**

Answer All the following questions

5 x 8 = 40M

11(a) Define Chisquare distribution. Write its properties and applications

(or)

(b) Derive the P.d.f of F-distribution

12(a) Explain the Criteria of a good estimator

(or)

(b) Show that Sample Variance is not an Unbiased estimator of Population Variance

13(a) Explain about (i) Null Hypothesis and Alternative Hypothesis

(ii) One tailed and Two tailed tests

(or)

(b) State and Prove Neyman Pearson Lemma

14(a) Explain t-test for equality of two means

(or)

(b) 300 numbers are drawn randomly with the digits 0,1,2.....9 from random numbers table and their frequencies are given below :

Digit	:	0	1	2	3	4	5	6	7	8	9
Frequency	:	28	29	33	31	26	35	32	30	31	25

Test whether the digits are drawn equally frequently from the random number tables

15(a) Explain Wilcoxon Mann-Whitney -U test

(or)

(b) Explain Sign test