

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai — 600 044.

B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022

SEMESTER - V

**20USTCT5009 - Statistical Inference–II**

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

### Section A

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

1. What is meant by statistical hypothesis? Explain the concept of Type 1 and Type 2 error.
2. Explain the following terms:  
(i) the best critical region (ii) power function of a test
3. Write down the properties of Monotone Likelihood Ratio.
4. Discuss the general method of construction of Likelihood Ratio Test.
5. Explain the test procedure for testing the equality of variance of two normal population.
6. Explain about the procedure for testing Mann-Whitney U-Test.
7. Explain the Limitation of Non-parametric test.
8. Explain the concept of SPRT.

### Section B

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. What is simple and composite Statistical Hypothesis? State and Prove Neymann Pearson Lemma.
10. State and prove Kerlin and Rubin theorem.
11. Explain the procedure for testing hypothesis for population mean, when the population variance is unknown.
12. Briefly explain about the Median Test procedure.
13. Explain the procedure of operating characteristic function in SPRT.

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