

Roll.No.

20USTCT5009

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.Statistics - END SEMESTER EXAMINATIONS - NOVEMBER 2025

SEMESTER - V

20USTCT5009 - Statistical Inference-II

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

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

1. Write the steps involved in testing of Hypothesis.
2. Based on Neyman–Pearson lemma, derive the critical region for testing $H : \mu = \mu_0$ vs $H : \mu_1 = \mu_0$ and $H_1 : \mu_1 = \theta_0$ in the case of normal distribution where σ^2 is known.
3. Describe power function and lower curve.
4. Explain Monotone likelihood ratio Property.
5. Write the properties of Likelihood Ratio test.
6. Describe the procedure of Mann-Whitney U-test.
7. Write the procedure for Sign test.
8. Elucidate the properties of SPRT.

Section C

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

9. State and Prove Neyman Pearson Lemma.
10. Derive the test for equality of means of two independent univariate normal populations with know variance.
11. State and prove kerlin and Rubin theorem.
12. Explain the procedure for Runs Test for Randomness.
13. Elaborate the procedure of OC and ASN for Poisson distribution.
