**B.Sc. DEGREE EXAMINATION, NOVEMBER 2016.**

**III YEAR — V SEMESTER**

**Major Paper — STATISTICAL INFERENCE - II**

**Time : 3 hours Max. Marks : 60**

**SECTION A — (10 × 1 = 10 marks)**

**Answer any *TEN* questions.**

1. What is meant by a statistical hypothesis?
2. Define power of a test.
3. Define Uniformly Most Powerful Test.
4. What is meant by power function?
5. Define Likelihood Ratio Test.
6. Write any two properties of LRT?
7. What is meant by Non-parametric test?
8. Define Median test.
9. Define Loss function.
10. Write any two properties of SPRT.
11. What is meant by composite hypothesis?
12. Define Run test.

**SECTION B — (5 × 4 = 20 marks)**

**Answer any *FIVE* questions.**

1. Explain the concepts of type I and type II errors.
2. Write a note on one parameter exponential family.
3. How do you test the equality of means of two independent Univariate normal populations with common unknown variance?
4. Explain Mann-Whitney U-test.
5. Describe the OC function and ASN function in sequential analysis.
6. Explain Null and alternative hypothesis.
7. Write a note on Non-Parametric test.

**SECTION C — (3 × 10 = 30 marks)**

**Answer any *THREE* questions.**

1. State and Prove Neymann-Person Lemma.
2. Describe UMP test for the parameter of univariate exponential distribution.
3. Explain the test for equality of variances of two independent univariate normal populations.
4. Explain Kolmogorov-Smirnov one sample test.
5. Give in brief the idea of sequential probability ratio test.

———————