# B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
## II Year IV Semester
## Allied Paper IV
## MATHEMATICAL STATISTICS - II

**Time : 3 Hours** **Max.marks :60**

**Section A** $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define power of the test.
2. Define type I and type II error.
3. Define F distribution.
4. State any two applications of t distribution.
5. Write down the additive property of chisquare distribution.
6. Define likelihood ratio test.
7. Write down the asymptotic properties of LR test.
8. Define unbiasedness.
9. State the invariance property of sufficient estimator.
10. Define chisquare distribution.
11. Write down the relationship between the t and F distribution.
12. Define uniformly most powerful test.

**Section B** $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Prove that the chisquare test of independence in case of 2*2 contingency table
14. Write down the applications of chisquare distribution.
15. Discuss the various steps involved in testing procedure of statistical hypothesis.
16. State and prove Rao black well theorem.
17. Mention the properties of a good estimator.
18. Explain about Neyman fisher factorization theorem.
19. Find the constants of F distribution.

**Section C** $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Derive the pdf of chisquare distribution with "n" df.

21. Explain in detail about one tailed and two tailed test with an example.
22. Find the probability density function of students's distribution with "n" df.
23. State and prove Cramer Rao inequality.
24. Prove that the relationship between F and chisquare distribution.

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