

**B.A /B.Sc. 3rd SEMESTER
STATISTICS**

DISCIPLINE SPECIFIC COURSE

ST320C: STATISTICS: LARGE SAMPLE TESTS AND SAMPLING DISTRIBUTIONS

CREDITS: THEORY: 4, PRACTICAL: 2

MAXIMUM MARKS: THEORY: 60; PRACTICAL: 30

THEORY (4 CREDITS)

UNIT- I

Concept of population, sample, Statistic, parameter and sampling distribution. Standard error of sample mean and sample proportion. Statistical hypothesis and its types. One tail and two tail tests. Types of errors, level of significance and critical region. Procedure for testing of hypothesis.

UNIT- II

Large sample tests: Tests of significance for testing of a single mean, single proportion, difference of two means and two proportions.

UNIT- III

Tests of significance based on Chi- square. Conditions for applying Chi-square test. Test for goodness of fit. Contingency table (2 X 2) and tests of independence of attributes in a contingency table. Yates' corrections. Chi-square test for specified value of population variance.

UNIT- IV

Exact sampling distributions: t- Statistics. Test for single mean and difference between two means. Paired t-test for difference between two means. F- Statistics or Variance Ratio Test. Assumptions in F-test. Tests of hypothesis of the variance of two populations.

REFERENCES

1. Freund J.E (2001): Mathematical Statistics, Prentice Hall of India.
2. Goon A.M Gupta M.K., Das Gupta, B. (1991): Fundamentals of Statistics, Vol. - I World Press Calcutta.
3. Hodges J.L and Lehman E.L (1964): Basic concepts of probability and Statistics, Holden Day.
4. Mood A.M, Graybill F. A and Boes D.C (1974): Introducing to the Theory of Statistics
5. S.C Gupta and V.K Kapoor (2007): Fundamentals of Mathematical Statistics. 11th edition (reprint) Sultan Chand and sons.

ADDITIONAL REFERENCES

1. Bhat B.R. Srivenkatramana T and Rao Madhava K.S. (1967): Statistics: A Beginner's Text, Vol. II, New Age International (P) Ltd.
2. Rohatgi V.K (1967): An Introduction to probability Theory and Mathematical Statistics, John Wiley & Sons.
3. Snedecor G.W and Cochran W.G. (1967): Statistical Methods. Iowa State University Press.

PRACTICAL (2 CREDITS)

MAXIMUM MARKS: 30

1. Tests of significance based on Chi- Square test.
2. Tests of significance based on t-test.
3. Tests of significance based on paired t-test
4. Tests of significance based on F- statistic.
5. Large sample tests for means and proportions.
6. Chi-square test of goodness of fit
7. Chi-square test for independence of attributes in contingency tables.