

A study of the following with reference to their applications in pharmacy and Biological Sciences.

### **UNIT – I**

Probability : Definition of laws of probability, probability distributions, properties of Normal, Binomial, Poisson distributions, sampling distributions of mean and variance, standard error and fiducial limits.

Regression and correlation : Linear and curvilinear regressions, methods of least squares, correlation coefficients, rank correlation multiple regression.

### **UNIT – II**

Tests of significance : Testing hypotheses, errors of two kinds, power of test, test of significance based on normal distribution and t-test, test for significance of correlation coefficient.

F-test & Analysis of variance : 1-way, 2-way and 3-way classification.

### **UNIT – III**

Chi-square test of

- (i) Variance of a normal population
- (ii) Goodness of fit.
- (iii) Independence in contingency tables.

Non-parametric tests, order statistics, sign test, run test, median test.

Design of experiments, Principles of randomization, replication and local control, completely randomized block and Latin square designs, factorial experiments, applications of the above designs in Pharmaceutical research.

### **UNIT – IV**

Statistical quality control, process control, control charts, acceptance sampling- sampling plans.