B.A/ B. Sc-II Semester-IV
Paper-II (ST-402)

Time: 3 Hours

M.M.:B. Sc: 40+10*

B.A: 28+7*

* Internal Assessment

Design of Experiments

Note : There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 5 to 8 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question, the distribution of marks for which will be as follows:-
 B.Sc.8 marks and B.A. 6 marks.

UNIT-I

Analysis of variance (ANOVA): Definition and assumptions for ANOVA. Analysis of variance for one-way classification and two-way classifications for fixed effect models with one observation per cell.

UNIT-II

Introduction to design of experiments, terminology: experiment, treatment, experimental unit, blocks, experimental error, replication, precision, efficiency of a design, need for design of experiments, size and shape of plots and blocks. Fundamental principles of design: randomization, replication and local control.

UNIT-III

Completely randomized design (CRD), Randomized Block Design (RBD), their layout, statistical analysis, applications, advantages and disadvantages. Efficiency of RBD relative to CRD.

UNIT-IV

Latin square design (LSD): Layout, statistical analysis, applications, merits and de- merits of LSD. Factorial designs: Definition, advantages and disadvantages.

Books recommended

S. No.	Title of Book	Name of author	Publisher
1.	Design and Analysis Of Experiments	Das M.N. & Giri	Springer Verlage
2.	Linear Models	Searle S.R.	John Wiley & Sons
3.	Linear Estimation And Design of Experiments	Joshi D.D.	Wiley Eastern
4.	Fundamentals of Applied Statistics	Gupta S.C. &. Kapoor V.K.	Sultan Chand & Sons