MODEL QUESTION PAPER
B.A / B.Sc (CBCS) Degree Examination
Fourth Semester
Part – II- Statistics
Paper – IV:: statistical techniques and designs of experiments
(With Mathematics Combination)

Time: Three hours

Maximum: 75marks

Part – A

(5x5 = 25marks)

Answer any Five from the following eight questions.

1. Distinguish between simple random sampling with and without replacement.

2. Explain the types of sampling.

3. Explain stratified random sampling and give their uses.

4. Give their merits and demerits of systematic sampling.

5. Explain analysis of variance.

6. Explain the principles of experimental design.

7. Explain L.S D with their layout.

8. Explain the factorial experiment.

Part – B

(5x10 = 50marks)

Answer the following (One from each unit)

UNIT – I

9 (a). Explain the methods of sampling.

(or)

(b). Find an unbiased estimate of variance of the sample mean in SRSWOR.

UNIT - II

10(a) Obtain the variances of the estimates mean in stratified random sampling With proportional and optimum allocations.

(or)

(b). In the usual notation, prove that
$V(\bar{y}_{st}) < V(\bar{y}_{st}) < V(\bar{y}_n)_R.$

UNIT - III

11(a). Explain the two way classification of ANOVA.

(or)

(b). Explain completely randomized design. Give the merits and demerits.

UNIT - IV

12(a). Explain the missing plot technique in R.B.D. give it's analysis.

(or)

(b). Explain the Latin square design. Obtain relative efficiency of L.S.D over C.R.D.

UNIT - V

13(a). Explain the main effects and interaction effects of 2^2 & 2^3 factorial experiment.

(or)

(b). Explain the statistical analysis of 2^3 factorial experiment.

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