

2072

B.A./B.Sc. (General) Fourth Semester

Statistics

Paper-203: Sample Surveys, Design and Analysis of Experiments

Time allowed: 3 Hours

Max. Marks: 65

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) Explain non-sampling and sampling errors. (2)
- b) Define systematic sampling alongwith its merits and demerits. (3)
- c) Explain fixed, random and mixed effects models along with suitable examples. (3)
- d) Define a 'Latin square'. (2)
- e) Write different sources of errors in a sample survey. (3)

UNIT - I

- II. Explain stratified random sampling. Also obtain the unbiased estimators of population mean and population variance. (13)
- III. Derive the relationship between variances of SRS, stratified random sampling with proportional allocation and stratified random sampling with optimum allocation. (13)
- IV. Obtain an unbiased estimate of the population mean for systematic sampling scheme and compare its efficiency with that of corresponding SRSWOR estimate. Also interpret the results. (13)
- V. Explain the concept of 'sample survey'. Explain the procedure in steps involved in a sample survey. Discuss in detail. (13)

P.T.O.

UNIT - II

- VI. Perform 'Two way classification of data with one observation in each cell' and analyse it. Give the complete testing procedure. (13)
- VII. Carryout the complete analysis of a completely randomized design (CRD) alongwith the demerits of CRD. (13)
- VIII. Define factorial experiments and analyse 2^3 factorial experiments along with its advantages. (13)
- IX. Write a short notes on the following:-
- a) Uniformity trials (3)
 - b) Experimental error (3)
 - c) Precision (3)
 - d) Local control (4)

x-x-x