M 11426

Reg. No. : .....

Name : .....

V Semester B.A./B.Sc./B.Com./B.B.A./B.B.A. T.T.M./B.B.M./B.C.A./B.S.W. Degree (CCSS – Regular) Examination, November 2011

CORE COURSE IN STATISTICS

5B08 STA : Sampling Techniques

Time: 3 Hours Max. Weightage : 30

***Instruction** : Use of Calculator and Statistical tables **permitted**.*

PART – A

Answer **any 10** questions. Weightage **1 each** :

1. Give two situations where only sampling can be used.
2. What is sampling frame ?
3. Distinguish between questionnaire and schedule.
4. What are the characteristics of probability sampling ?
5. Define simple random sampling.
6. What is random number table ?
7. What are the advantages of stratified sampling ?
8. Define systematic sampling.
9. Discuss a situation where systematic sampling is better than simple random sampling.
10. Define cluster sampling.
11. Write a very short note on Indian Statistical Institute.

P.T.O.

PART – B

Answer **any 6** questions. Weightage **2 each** :

12. Distinguish between sampling and non-sampling errors.

13. Discuss any two methods of taking simple random samples.

14. In SRSWOR, find an unbiased estimate of the population total.

15. In SRSWR, show that the sample mean square is an unbiased estimate of the population variance.

16. With usual notations prove that

$$V(p) = \frac{N-n}{N-1}\,\frac{PQ}{n}.$$

17. What is allocation problem in stratified random sampling ? Derive the variance of the estimate of the population mean under proportional allocation.

18. With usual notations prove that

$$V_{opt}(\bar{y}st) \leq V_{prop}(\bar{y}st).$$

19. Compare the efficiencies of simple random sampling and systematic sampling in estimating the population mean.

20. Explain the Lahiri's method of selecting PPS sample.

PART – C

Answer **any two** questions. Weightage **4 each** :

21. Discuss the principal steps in a large scale sample survey.

22. In stratified sampling, find the value of the sample size in each stratum under optimum allocation with fixed sample size. Hence find the variance of the estimated mean.

23. In cluster sampling, derive the variance of the estimate of the population mean in terms of intra-cluster correlation coefficient.

24. Discuss the role of the institutions NSSO, CSO and ICMR in the planning and the development process of the nation.
