

Reg. No. : .....

Name : .....

V Semester B.Sc. Degree (CCSS – Reg./Supple./Imp.)  
Examination, November 2015  
CORE COURSE IN STATISTICS  
5B08 STA : Sampling Techniques

Time : 3 Hours

Max. Weightage : 30

**Instruction : Use of calculators and tables are permitted.**

## PART – A

Answer **any 10** questions. Weight **1 each**.

1. State the different types of populations.
2. Name some situations where sampling is unsuitable.
3. What are the different methods of sampling ?
4. State the difference between SRSWR and SRSWOR.
5. Define : Purposive sampling.
6. What do you understand by stratified random sampling ?
7. Define “random start” in systematic sampling.
8. What are the sources of errors in sampling ?
9. Define cluster sampling.
10. Distinguish between questionnaire and schedule.
11. State the functions of central statistical organisation. **(10×1=10)**



## PART – B

Answer **any 6** questions. Weight **2 each**.

12. Explain the need and utility of sampling.
13. Describe the characteristics of a good questionnaire.
14. What are the advantages and limitations of random sampling ?
15. Explain the lottery method of drawing a random sample.
16. Describe different allocation problems in stratified sampling.
17. In SRSWR, show that, the sample mean square is an unbiased estimator of the population mean.
18. Make a comparison between random sampling and systematic sampling.
19. If the clusters are of equal size, prove that the sample mean is an unbiased estimator of population mean in the case of cluster sampling.
20. Explain the role of statistical organisations in the development of the nation. (6×2=12)

## PART – C

Answer **any 2** questions. Weight **4 each**.

21. Show that in SRSWOR of attributes  $V(p) = \frac{N-n}{N-1} \cdot \frac{PQ}{n}$  where  $Q = 1 - P$ , (with usual notations).
22. Derive  $V(\bar{y}_{st})$ , with usual notations in stratified random sampling.
23. Derive an expression for variance of estimate of population mean in systematic random sampling.
24. Explain the principal steps in conducting a sample survey. (2×4=8)