Reg. No. : ....

Name : ....

V Semester B.Sc. Degree (CBCSS – Supplementary)
Examination, November 2022
(2016 – 18 Admissions)
CORE COURSE IN STATISTICS
5B08 STA – Sampling Techniques

Time : 3 Hours   Max. Marks : 48

PART – A
(Short Answer)

Answer **all** the 6 questions.   (6×1=6)

1. Write down the advantages of sampling over census method.

2. What is meant by finite population correction ?

3. What are the major divisions of NSSO ?

4. Give a situation where you will be interested in estimating population proportion.

5. In what situation cluster sampling is preferred ?

6. Give any two merits of systematic sampling.

PART – B
(Short Essay)

Answer **any 7** questions.   (7×2=14)

7. Show that in SRSWOR the sample mean is unbiased estimator of population mean.

8. What are the advantages of sample survey ?

9. Write a short note on Indian Statistical Institute.

10. Derive the sample size in SRSWOR selection.

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11. Prove that in stratified sampling, sample mean is unbiased estimator of population.

12. What is meant by circular systematic sampling ?

13. Define cluster sampling.

14. Write a short note on sampling of attributes.

15. Explain PPS sampling.

PART – C
(Essay)

                                                                  (4×4=16)

Answer **any four** questions.

16. Explain the need of sampling techniques with an example.

17. Prove that in SRSWOR, $V(\bar{y}_n) = \left(\frac{1}{n} - \frac{1}{N}\right)S^2$.

18. Derive any two properties of sample mean in SRSWR.

19. Explain the functions of NSSO.

20. Discuss the advantages of stratified random sampling over other sampling methods.

21. Explain cumulative total method of PPS selection.

PART – D
(Long Essay)

                                                                  (2×6=12)

Answer **any two** questions.

22. Discuss about sampling errors and non-sampling errors. Explain the sources of non-sampling errors.

23. Explain the origin and functions of the Indian Census Operations.

24. Explain stratified random sampling. Derive the expression for n_h under Neymann allocation and also obtain $(\bar{y}_{st})$.

25. Derive the variance of unbiased estimator for mean per element under cluster sampling in terms of intracluster correlation.

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