Reg. No. : ....

Name : ....

Sixth Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/ Improvement) Examination, April 2024
(2019 to 2021 Admissions)
CORE COURSE IN STATISTICS
6B12STA : Sampling Techniques and Design of Experiments

Time : 3 Hours

Max. Marks : 48

PART – A
(Short Answer)

Answer all questions. Each question carries one mark.

(6×1=6)

1. Describe SRSWOR.

2. Define non sampling error.

3. Define stratum weight in stratified sampling.

4. Define systematic sampling.

5. Which is the test used for testing equality of means of several normal populations ?

6. What do you mean by one-way classified data ?

PART – B
(Short Essay)

Answer any 7 questions. Each question carries two marks.

(7×2=14)

7. Define sampling frame and sampling units.

8. Explain the disadvantages of census survey.

9. What is finite population correction ?

10. Explain proportional allocation.

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11. Give an example where stratified sampling is suitable.

12. Describe the method of selecting a linear systematic sample.

13. Give any two advantages of stratified sampling over simple random sampling.

14. What do you mean by randomization ?

15. What are complete block designs ? Give an example.

PART – C
(Essay)

Answer any 4 questions. Each question carries 4 marks.

(4×4=16)

16. Distinguish between probability sampling and non-probability sampling.

17. Explain circular systematic sampling.

18. Explain analysis of covariance.

19. Stating clearly the assumptions, explain the model for a two way classified data.

20. What are auxiliary variables ? Give an example.

21. Explain the advantages of randomized block design over completely randomized design.

PART – D
(Long Essay)

Answer any 2 questions. Each question carries 6 marks.

(2×6=12)

22. With usual notations, show that $V(\bar{Y}_{ran}) \geq V(\bar{Y}_{prop}) \geq V(\bar{Y}_{Neyman})$.

23. Explain the analysis of a one-way classified data.

24. Distinguish between a randomized block design and a Latin square design. Compare their efficiencies.

25. Explain the analysis of a Latin square design.