M.Sc. DEGREE EXAMINATION,APRIL 2020
II Year III Semester
Sample Survey Designs

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. Mention the procedures for selecting pps sampling with replacement.
2. Define Horvitz-Thompson estimator.
3. Define linear systematic sampling.
4. State any two principles of stratification.
5. What is Jacknife ratio estimators.
6. Write the expression for bias of regression estimator.
7. What is the difference between cluster sampling and stratified sampling?
8. Give an example for multistage sampling.
9. What is non-sampling error?
10. What are the sources of non-sampling error?
11. Define difference estimator.
12. When is ratio estimator is superior to mean per unit?

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. Explain the general selection procedure of selecting pps sample.
14. Prove that the systematic sampling is more precise than simple random sampling without replacement if the variation within the systematic sample is larger than the population variance as a whole.
15. Describe the methods of allocating a sample to different strata.
16. Obtain the bias of regression estimator.
17. Obtain the upper bound to the ratio of the bias to its standard error.
18. Mention the advantages of cluster sampling.
19. Explain non-sampling errors.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain the different procedures of selecting pps sample with replacement.
21. Compare systematic sampling with simple random sampling and stratified sampling.
22. Compare regression estimator with ratio estimator and mean per unit method.
23. Derive the variance of mean in two stage sampling.
24. Elaborate Simmons randomized response model

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