Dept. No.

Date: 29-10-2018   Max. : 100 Marks

Time: 01:00-04:00

Part – A

Answer ALL the Questions   **10 x 2 = 20 marks**

1. Define parameter with an example.
2. Define Complete Enumeration.
3. State the limitations of sampling techniques.
4. Define probability sampling.
5. Define the term Strata.
6. What is meant by sampling interval?
7. What is Circular systematic sampling?
8. Explain Lottery method of selecting a random sample.
9. Define Regression Estimator.
10. Define Ratio Estimator.

Part – B

Answer any FIVE Questions   **5 x 8 = 40 marks**

11. Discuss about the three principles of sample survey.
12. Explain about the Non-sampling errors and mention its causes.
13. Show that, in a SRSWOR, the sample mean is an unbiased estimator of the population mean.
14. Explain in detail about simple random sampling technique.
15. Discuss about the advantages of stratified random sampling technique.
16. Derive the approximate bias and MSE of the regression estimator.
17. Describe the terms Proportional and Optimal Allocations.
18. Derive the approximate Bias of the ratio estimate.

Part – C

Answer any TWO Questions   **2 x 20 = 40 marks**

19. A) Explain about the twelve principal steps in sample surveys.
    B) Explain about the sampling errors and mention their causes.

20. A)Prove that, in SRSWOR, the variance of the sample mean is given by $Var(\overline{Y}_n)=\left(\dfrac{N-n}{nN}\right)S^2$

    B) State the advantages and disadvantages of systematic sampling technique.

21. A) Explain the procedure of systematic sampling technique for selecting a sample.
    B) Mention the advantages of simple random sampling method.

22. If the population consists of linear trend,

    Prove that, $Var\left(\overline{y}\right)_{st} \leq Var\left(\overline{y}\right)_{sys} \leq Var\left(\overline{y}\right)_{ran}$.

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