SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc.(Statistics) - END SEMESTER EXAMINATIONS APRIL-2023
SEMESTER - VI
20USTCT6013 - Sampling Methods

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Explain Sampling errors.

2. Describe the principle advantages of stratified random sampling.

3. Elaborate about systematic sampling with an example.

4. Explain Lahiri's method of selecting a sample.

5. Show that in SRSWOR, the sample mean is an unbiased estimate of population mean.

6. Discuss the methods of allocation of sample size.

7. Derive the formula for $V\overline{(y_{sys})}$ with S^2 and S^2_{wsy}

8. Write a note on PPS sampling.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Discuss the principle steps involved in planning of sample surveys.

10. Show that s^2 is an unbiased for S^2, in SRSWOR.

11. In stratified random sampling, obtain the formula for optimum allocation for fixed cost.

12. Prove that $V(\bar{y}_n)_R \geq V(\bar{y}_{sys}) \geq V(\bar{y}_{st})$

13. In srswor show that $B(\hat{R}) = \dfrac{1-f}{n\bar{X}^2}(RS_X^2 - \rho S_Y S_X)$

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