Seat No. _____

HK-003-1172004

M. Sc. (Sem. II) Examination

April - 2023

MS-204 : Sampling Techniques

Faculty Code : 003

Subject Code : 1172004

Time : **2:30** Hours / Total Marks : **70**

1 Answer briefly any Seven of the following questions : **14**

(1) How many ways of obtaining any information to conduct a survey ?

(2) What is sampling frame and sample unit ? Explain with suitable example.

(3) Write the advantages of sampling over complete enumeration.

(4) What are the types of surveys ?

(5) List out the name of probability sampling methods.

(6) Which sampling techniques can be used after the selection of sampling units ?

(7) Write the full form of PPSWR and PPSWOR.

(8) In which condition, ratio estimator is more efficient than the sample mean based on SRSWOR ?

(9) Explain the concept of non-response error.

(10) When can we use interpenetrating sub-sample technique ?

2 Answer any Two of the following questions : **14**

(1) Explain principal steps for conducting a sample survey in detail.

(2) Find the estimation of population mean of SRSWOR.

(3) Find the estimation of population proportion of SRSWR.

3 Answer the following questions : **14**

(A) Explain Jackknife method for obtaining a ratio estimate with lower bias.

(B) Explain Cumulative total method of PPSWR.

OR

3 Answer the following questions : **14**

(A) Explain the comparison of cluster sampling with SRSWOR.

(B) Find the intraclass correlation for cluster sampling.

4 Answer the following questions : **14**

(A) Explain the comparison of systematic sampling and stratified sampling.

(B) Prove that the Des Raj estimator of sample mean is an unbiased estimator of population mean.

5 Answer any Two of the following questions : 14

(1) Explain the allocation of sample to the two stages when equal first stage units under the cost function is $C=kmn$.

(2) Explain the comparison of two stage sampling with one stage sampling.

(3) Explain double sampling and estimate it's mean and variance.

(4) Explain stratified sampling in detail ? Estimate its population mean.

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