M.Sc. Statistics Sem III

SEMESTER-III EXAMINATION Nov-2014

PAPER: 11 - THEORY OF SAMPLING AND SOFTWARE TOOLS

MARKS: 70   Code-3576   DURATION: 2.5 HOURS

Q-1 (A)   Explain PPS sampling "with" and "without" replacement.   (7)

Q-1 (B)   State Horvitz Thompson estimator for population total Y. Show that it is unbiased and obtain its variance.   (7)

OR

Q-1 (A)   Explain the theory of estimator under Yates and Grundy Scheme.   (7)

Q-1 (B)   Discuss Lahiri's method of selection to obtain PPSWR sample. Discuss drawbacks of the methods if any.   (7)

Q-2 (A)   Explain Regression Method of Estimation .   (7)

Q-2 (B)   State advantages and disadvantages of two stage sampling.   (7)

OR

Q-2 (A)   Describe two stage sampling with illustration. Obtain unbiased estimator of population total with SRSWOR at first stage and SRSWR at second stage.   (7)

Q-2 (B)   Explain estimation of Sampling Variance.   (7)

Q-3 (A) What are the situations in which ratio estimate is used? Obtain an unbiased ratio type estimator for the population mean. (7)

Q-3 (B) Explain Almost Unbiased Ratio Type Estimator. (7)

OR

Q-3 (A) Explain "Bias" of Ratio Estimator. (7)

Q-3 (B) Explain MSE of Ratio Estimator. (7)

Q-4 (A) Discuss linear regression model in SYSTAT. (7)

Q-4 (B) Discuss k-means cluster analysis in SYSTAT. (7)

OR

Q-4 (A) Discuss various types of graphs used in SYSTAT. (7)

Q-4 (B) Discuss binary logit model in SYSTAT. (7)

Q-5 (A) Explain analysis of linear regression model by Bayesian method in SYSTAT. (7)

Q-5 (B) Discuss hierarchical clustering in SYSTAT. (7)

OR

Q-5 (A) Discuss applications of logistic regression model in SYSTAT. (7)

Q-5 (B) What is the importance of descriptive statistics? How do you obtain it in SYSTAT? (7)

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