AP-103

May-2016

B.Sc., Sem.-IV

CC-250 : Statistics
(Statistical Tests, Official Statistics and Sampling)

Time : 3 Hours]   **[Max. Marks : 70**

Instructions : (1) Attempt **all** questions.

                 (2) **All** questions carry equal marks.

1.   (a) Explain procedure for testing of hypothesis.

                       OR

          What do you mean by large sample ? Explain Z-test to test the significance of single mean based on a large sample.

    (b) Give the procedure for testing the significance of difference between two proportions based on large sample.

                       OR

          Give the procedure for testing the significance of difference between two means based on large sample.

2.   (a) What do you mean by residual ? Discuss properties of residuals.

                       OR

          Define multiple correlation coefficient. Discuss its properties.

    (b) Obtain an expression for the variance of the residual $X_{1.23}$ in terms of the correlations r_{12}, r_{23} and r_{31} and deduce that $R_{1(23)} \geq r_{12}$ and r_{13}.

                       OR

          If r_{12} and r_{13} are given, show that r_{23} must lie in the range :

$$r_{12}\,r_{13} \pm \left(1 - r_{12}^2 - r_{13}^2 + r_{12}^2 r_{13}^2\right)^{1/2}$$

         If $r_{12} = k$ and $r_{13} = -k$, show that r_{23} will lie between -1 and $1 - 2k^2$.

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3. (a) What is Indian Council of Medical Research ? Explain its activities.

OR

What is NSSO ? Explain its functions.

(b) Explain the meaning, origin, purpose and function of the CSO and ISI.

OR

Explain the role of Indian Census Operations in planning and development processes.

4. (a) What do you understand by complete enumeration and sample enumeration ? Give their advantages and disadvantages.

OR

Discuss steps required to plan a sample survey to study the problem of indebtedness among the rural agricultural population in India.

(b) Explain sampling and non-sampling errors.

OR

Explain probability and non-probability sampling.

5. Write answers in brief :

(1) Define : Null and Alternative hypothesis.

(2) Define : Level of significance and degree of freedom.

(3) Define partial correlation coefficient.

(4) Give two properties of partial correlation coefficient.

(5) What do you mean by sampling unit ?

(6) What do you mean by sampling frame ?

(7) Define mixed sampling.

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