



DCST101

Reg. No.

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**I Semester B.Sc. Degree Examination, March/April - 2024**

**STATISTICS**

**Descriptive Statistics**

**(NEP Scheme Freshers and Repeaters)**

**Paper : I**



**Time : 2½ Hours**

**Maximum Marks : 60**

**Instructions to Candidates:**

1. Answer any **Eight** Sub - Questions from section A and **Three** questions from section B.
2. Scientific calculators are allowed.

**SECTION - A**

**I. Answer any EIGHT sub - divisions from the following.**

**(8×3=24)**

1.
  - a) Describe the scope of statistics.
  - b) Distinguish between classification and tabulation of data.
  - c) Explain different parts of a statistical table.
  - d) Examine the effect of change of origin and scale on arithmetic mean.
  - e) Define raw and central moments. Write moment coefficient of Kurtosis.
  - f) What is a scatter diagram? Draw neat sketches to show perfect positive and negative correlation.
  - g) Define Karl Pearson correlation co-efficient. State its properties.
  - h) Define co-efficient of determination and give its interpretation.
  - i) Write the properties of regression co-efficient.
  - j) Define multiple correlation co-efficient and mention its properties.

**[P.T.O.]**



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DCST101

SECTION - B

II. Answer any **THREE** questions from the following. (3×12=36)

2.
    - a) Describe the various steps that are taken in conducting a statistical survey.
    - b) What is a questionnaire? What are the precautions necessary in drafting a good questionnaire?
    - c) Explain the construction of Histogram and frequency curve. (4+4+4)
  3.
    - a) Write the essential requisites of an ideal measure of central tendency.
    - b) Obtain an expression for combined geometric mean.
    - c) Show that Standard Deviation (S.D) is not less than mean deviation from mean. (3+5+4)
  4.
    - a) Derive the expression for combined standard deviation.
    - b) What is skewness? Explain different types of skewness with sketches.
    - c) With usual notations, prove that  $\beta_2 \geq \beta_1$  where  $\beta_1$  and  $\beta_2$  is moment coefficient Skewness and Kurtosis respectively. (4+4+4)
  5.
    - a) Obtain limits for Spearman's rank correlation co-efficient.
    - b) Distinguish between correlation and regression.
    - c) What is curve fitting? Obtain normal equations for fitting a straight line. (5+2+5)
  6.
    - a) When two attributes are said to be associated?
    - b) Explain odds ratio.
    - c) With usual notations prove that  $1 - R_{1.23}^2 = \frac{(1 - \rho)(1 + 2\rho)}{(1 + \rho)}$   
where  $\rho = r_{12} = r_{13} = r_{23}$
    - d) Mention the properties of partial multiple correlation co-efficients. (2+2+4+4)
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