



DCST101

Reg. No.

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I Semester B.Sc. Degree Examination, May/June - 2022

**STATISTICS - I**  
**Descriptive Statistics**  
**(NEP 2021 Scheme)**



**Time : 2½ Hours**

**Maximum Marks : 60**

**Instructions to Candidates:**

1. Answer any Eight Sub - divisions. from section A and three questions from section B.
2. Scientific calculators are allowed.

**SECTION - A**

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

**(8×3=24)**

1.
  - a. Distinguish between graphical and diagrammatical representation of data.
  - b. Mention the methods of collecting primary data.
  - c. Explain the following with an example.
    - i. Nominal.
    - ii. Ordinal.
    - iii. Interval scales.
  - d. What do you mean by central tendency? Mention the requisites of a good measure of central tendency.
  - e. Distinguish between absolute and relative measures of dispersion. Also state the corresponding measures.
  - f. What is scatter diagram? How do you use it to interpret correlation between two variables?
  - g. Define coefficient of determination and give its interpretation.
  - h. Write the formula for spearman's rank correlation coefficient.
  - i. Write the properties of regression coefficients.
  - j. Define Yule's coefficient of association and coefficient of colligation.

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



## SECTION - B

Answer any **THREE** questions.

(3×12=36)

2. a. What is sampling? Explain various methods of sampling. (6+2+4)  
b. Distinguish between classification and tabulation of data.  
c. Explain the terms  
i. Frequency  
ii. Class width.  
iii. Relative frequency.  
iv. Frequency density.
3. a. State the properties of arithmetic mean and prove any one of them.  
b. Define geometric mean (GM). Obtain the expression for combined G.M. of two series.  
c. Define quartile - deviation and its co-efficient. (6+4+2)
4. a. Derive the expression for combined variance.  
b. Explain how the first four moments are used to describe the characteristics of a frequency distribution.  
c. What is skewness? Explain different types of skewness with sketches. (4+5+3)
5. a. Define correlation coefficient. Mention its properties and prove any one of them.  
b. What is curve fitting? Obtain the normal equations for fitting a curve of the type  $Y = a + bX$ .  
c. Distinguish between correlation and regression. (5+5+2)
6. a. What is contingency table?  
b. Mention the properties of partial and multiple correlation coefficient.  
c. If  $\rho = r_{12} = r_{13} = r_{23}$ , then show that  $1 - R_{1.23}^2 = \frac{(1 - \rho)(1 + 2\rho)}{(1 + \rho)}$ . (2+5+5)
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