Sylhet Cadet College

First Term-End Examination - 2023

Class: XI

Subject: Statistics First Paper (Creative) **Set: A**

Time: 1 hour & 35 minutes **Subject Code: 129** **Full Marks: 50**

Answer all the THREE questions. Figures in the right indicate full marks.

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1. **An analyst obtains some data:**

$$x_1 = 15, x_2 = -12, x_3 = 17, x_4 = 11, x_5 = 23$$

   (a) What is sample? 1

   (b) Briefly explain shift or origin and scale. 2

   (c) Compute the value of $\sum_{i=1}^{5}(x_i - 10)^2$ 3

   (d) Find the value of $\sum_{i=1}^{5}(5x_i^2 - 4x_i - 3)$ and examine its dependency on origin and scale. 4

2. **Favorite colors of 30 individuals are noted down. There are five different colors. The recorded colors are given below:**

Brown Red Pink Green Green Green Brown Pink Brown Red
Brown Red Green Pink White Red Brown Green White Brown
White Brown Pink Red White Brown Green Red Pink Red

   (a) What is nominal data? 1

   (b) What are the ways to deal with categorical data? 2

   (c) Draw a Pie Chart from the above data and explain. 3

   (d) Is Bar Diagram a better representation of this data? Justify. 4

3. **Grades of a an undergraduate student with major in statistics are given below:**
   [Credits serve as weights]

Course	Grade	Credit
Probability	3.75	4
Simulation	3.50	3
Calculas	3.50	4
Linear Algebra	3.75	4
Econometrics	3.00	2
Programming	3.50	3

   (a) Write down the formula of weighted mean. 1

   (b) What is difference between weight and frequency? 2

   (c) Determine the GPA of the student. 3

   (d) Determine the geometric mean for the data and evaluate suitability. 4

Absence of evidence is not evidence of absence. – **Carl Sagan**