SYLHET CADET COLLEGE

PRETEST EXAMINATION - 2024 | Set | A |
CLASS: XII
STATISTICS (CREATIVE) **Subject Code:** | 1 | 2 | 9 |
FIRST PAPER
TIME – 2 hours & 35 minutes
FULL MARKS – 50

[**N.B.** – The figures of the right margin indicate full marks. Read the stems carefully and answer the associated questions. Answer any **FIVE** questions taking at least two questions from each group]

Group - A

1. **The monthly sales and expenses (in thousand BDT) of five retail stores are given below:**

Store	A	B	C	D	E
Sales (X)	50	65	40	70	55
Expenses (Y)	30	45	25	50	35

   (a) Calculate $\sum_{i=1}^{5}(x_i + y_i)$ 3

   (b) Verify whether $\sum_{i=1}^{5}(3x_i - 2y_i) = 3\sum_{i=1}^{5} x_i - 2\sum_{i=1}^{5} y_i$ holds true. 4

2. **The following table tracks the number of individuals who sleep within specific hourly intervals.**

Hours of Sleep (per night)	4-5	5-6	6-7	7-8	8-9	9-10	10+
Number of Individuals	12	20	25	30	18	8	7

   (a) Draw an Ogive from the data provided and explain. 3

   (b) Write five useful insights about the data combining information from Ogive and the table. 4

3. **The number of hours worked (in a week) and weekly earnings (in dollars) of some employees are recorded as follows:**

   (a) Are, in the stem, $\sum_{i=1}^{n}\sum_{i=1}^{n} x_i y_j = \sum_{i=1}^{n} x_i y_i$? Vindicate 3

   (b) Using the data, prove that the sum of squares is unequal to the square of the sum of numbers. 4

4. **The ages of 20 participants in a fitness program were recorded and found to be as follows:**

25, 30, 28, 35, 40, 38, 26, 32, 36, 31
27, 33, 29, 41, 42, 37, 34, 39, 43, 45

   (a) Create a frequency distribution and interpret. 3

   (b) Create a Histogram from the data and explain. If the no. of classes were fewer, how would the pattern of the distribution shift? 4

Hours Worked (x)	40	35	50	30
Weekly Earnings (y)	400	350	500	300