SYLHET CADET COLLEGE

PRE-TEST EXAMINATION - 2023 | Set | :A |
CLASS: XII
MULTIPLE CHOICE QUESTIONS **Subject Code:** | 1 | 2 | 9 |
STATISTICS FIRST PAPER
TIME – 25 minutes
FULL MARKS – 25

[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point pen, the circle of the letter that stands for the correct/best answer in the "Answer sheet" for the Multiple Choice Questions Examination.]

Candidates are asked not to leave any mark or spot on the question paper.

1. **Which cannot be performed using Univariate data?**
   (a) Central tendency (b) Dispersion (c) Skewness (d) Regression

2. **Cities ranked according to habitability level show – measurement scale**
   (a) Nominal (b) Ratio (c) Interval (d) Ordinal

3. **Which of the following is correct?**
   (a) $\sum_{i=1}^{20} cx_i = nc\sum_{i=1}^{20} x_i$ (b) $\sum_{i=1}^{20} cx_i = nc\sum_{i=1}^{20} x_i$ (c) $\sum_{i=1}^{20} cx_i = c\sum_{i=1}^{20} x_i$ (d) $\sum_{i=1}^{20} cx_i = c^2\sum_{i=1}^{20} x_i$

4. **Which is not an example of shift of scale?**
   (a) $y_i = \frac{x_i}{a}$ (b) $y_i = cx_i$ (c) $y_i = x_i - 2$ (d) $y_i = \frac{cx_i}{d}$

5. **Which measure of central tendency is suitable for qualitative variable?**
   (a) Arithmetic Mean (b) Harmonic Mean (c) Quadratic Mean (d) Mode

6. **From the following table, $\sum_{i=1}^{4} x_i y_i$ =?**

X	1	5	3	2
Y	20	12	3	14

   (a) 14 (b) 201 (c) 99 (d) 117

7. **Arithmetic Mean is –**

   i. Rigidly defined
   ii. Unaffected by sample fluctuation
   iii. Suitable for algebraic analysis

   Which one is correct?
   (a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

   Answer the next two (2) questions based on the following information

Class	≤ 20	20-25	25-50	50-60	69-70	≥ 70
Frequency	5	10	10	7	5	3
Cumulative Frequency	5	15	25	32	37	40

8. **How many values are between 20 and 70?**
   (a) 20 (b) 32 (c) 35 (d) 37

9. **Which one is the median class?**
   (a) 20-25 (b) 25-50 (c) 50-60 (d) 60-70

10. **In presence of negative values, which measure is not usable?**
    (a) Arithmetic Mean (b) Geometric Mean (c) Quadratic Mean (d) Harmonic Mean

11. **For grouped data, which formula is correct for Arithmetic Mean?**
    (a) $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$ (b) $\bar{x} = \frac{\sum x_i}{N}$ (c) $\bar{x} = \frac{\sum f_i x_i}{n}$ (d) $\bar{x} = \frac{\sum f_i}{N}$

12. **Arithmetic mean of the series 2, 12, 22, $\cdots$, 92 is–**
    (a) 45 (b) 46 (c) 47 (d) 55

13. **Median can be determined from the–**

(a) Histogram (b) Frequency curve (c) Ogive (d) Pie Chart

14. **Which statement is correct**

(a) Quartiles are well defined (b) Outliers affect Median

(c) Median is always present in data (d) Quadratic mean is widely used

15. **The formula of coefficient of variance (CV) is –**

(a) $\frac{\mu_2}{n} \times 100$ (b) $\frac{\mu_2}{\mu_1} \times 100$ (c) $\frac{\mu_2}{\bar{x}} \times 100$ (d) $\frac{\mu_3}{\sigma} \times 100$

16. **Which measure is unit-free?**

(a) Range (b) Mean deviation (c) Standard deviation (d) Coefficient of variation

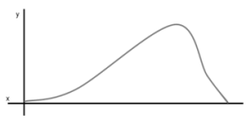
17. **Which is not a type of Moments**

(a) Central Moments (b) Raw Moments (c) Corrected Moments (d) Rectified Moments

18. **The second moment around w is –**

(a) $\frac{\sum(x_i-\bar{x})^n}{w}$ (b) $\frac{\sum(x_i-\bar{x})^2}{w}$ (c) $\frac{\sum(x_i-w)^2}{n}$ (d) $\frac{\sum(x_i-w)^n}{2}$

19. **The following graph is an example of –**



(a) Positive Skew (b) Negative Skew (c) No Skew (d) Not detectable

20. **Which formula is correct for determining skewness?**

(a) $\gamma_1 = \sqrt{\frac{\mu_3^2}{\mu_2^3}}$ (b) $\gamma_1 = \sqrt{\beta_1^2}$ (c) $\gamma_1 = \sqrt{\frac{\mu_3}{\mu_2^3}}$ (d) $\frac{\mu_2}{\sqrt{\mu_3^2}}$

21. **A linear trend goes along a –**

(a) a curved line (b) a wave (c) straight line (d) circle

Answer the next THREE questions based on the following information

Year	2016	2017	2018	2019	2020	2021	2022	2023
USD Exchange Rate	78.35	79.49	82.87	83.26	84.60	84.37	85.80	106.70

Table 1: Source–Investing.com

22. **What is the second value of semi-average method?**

(a) 85.40 (b) 90.37 (c) 91.73 (d) 89.78

23. **What kind of a trend do the data have?**

(a) Upward (b) Downward

(c) Both upward & downward (d) No trend

24. **Which component of time series is visible in the later part of the data?**

(a) Seasonal Variation (b) General Trend (c) Irregular Variation (d) Cyclic Variation

25. **Limitations of published statistics in Bangladesh are –**

i. Wrong data collection method
ii. Insufficient data
iii. Lack of proper training

Which one is correct?

(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

Answer Key

1. (d) Regression
2. (d) Ordinal
3. (b) $\sum_{i=1}^{20} cx_i = nc\sum_{i=1}^{20} x_i$
4. (a) $y_i = \frac{x_i}{a}$
5. (d) Mode
6. (d) 117
7. (b) i and iii
8. (b) 32
9. (b) 25-50
10. (b) Geometric Mean
11. (a) $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$
12. (c) 47
13. (c) Ogive
14. (a) Quartiles are well defined
15. (c) $\frac{\mu_2}{\bar{x}} \times 100$
16. (d) Coefficient of variation
17. (d) Rectified Moments
18. (a) $\frac{\sum(x_i - \bar{x})^n}{w}$
19. (a) Positive Skew
20. (a) $\gamma_1 = \sqrt{\frac{\mu_3^2}{\mu_2^3}}$
21. (a) a curved line
22. (b) 90.37
23. (a) Upward
24. (c) Irregular Variation
25. (d) i, ii and iii