SYLHET CADET COLLEGE

TEST EXAMINATION - 2023

Set	D

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. **For a symmetrical distribution, what is the value of β_1?**
   (a) 0 (b) 1 (c) -1 (d) ∞

2. **What is the formula of IQR?**
   (a) $IQR = Q_3 + Q_1$ (b) $IQR = Q_3 - Q_1$ (c) $IQR = 2Q_3 - Q_1$ (d) $IQR = \frac{Q_3 - Q_1}{2}$

3. **A survey categorizing people by their favorite color is an example of which measurement scale?**
   (a) Nominal (b) Ordinal (c) Interval (d) Ratio

4. **If $\sum_{i=1}^{25} z_i^2 = 75$ and $\sum_{i=1}^{25} z_i = 50$, compute $\sum_{i=1}^{25} z_i^2 + 2\sum_{i=1}^{25} z_i - 125$.**
   (a) 50 (b) 75 (c) 100 (d) 25

5. **If $y_1 = 5$, $y_2 = 2$, $y_3 = -1$, and $y_4 = 4$, compute $\sum_{i=1}^{4}(y_i^2 + 2)$.**
   (a) 50 (b) 40 (c) 44 (d) 60

6. **A good measure of central tendency -**
   i. is stable for different samples
   ii. provides a single representative value
   iii. ignores extreme values completely
   Which one is correct?
   (a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

7. **Which measure is suitable for open-ended distribution?**
   (a) Median (b) Mode (c) Geometric Mean (d) Arithmetic mean

8. **Which is not a measure of central tendency?**
   (a) Arithmetic mean (b) Mode (c) Range (d) Quadratic mean

9. **Which time series component represents fluctuations occurring at regular intervals within a year?**
   (a) Trend (b) Seasonal Variation (c) Irregular Variation (d) Cyclic Variation

   Answer the next three questions based on the following table:

   The following table shows the monthly sales revenue (in thousand dollars) of a store over seven months.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul
Revenue (000$)	50	55	60	70	75	80	85

10. **Which month had the highest sales revenue?**
    (a) May (b) Jun (c) Jul (d) Apr

11. **What is the first value of the 2-monthly moving average?**
    (a) 52.5 (b) 55 (c) 57.5 (d) 60

12. **Using the semi-average method, what is the first average revenue?**
    (a) 57.5 (b) 60 (c) 62.5 (d) 65

13. **Which business is most likely to experience strong seasonal variation in its sales?**
    (a) A supermarket (b) A toy store (c) A furniture store (d) A gas station

    Answer the next three questions based on the following information

    The following table shows weekly production of milk (in liters) by different varieties of cows.

Interval	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	5	12	18	25	20	10

14. **What is the median?**

(a) 43 (b) 44 (c) 45 (d) 50

15. **What is the lower limit of class interval for first quartile?**

(a) 10 (b) 20 (c) 30 (d) 40

16. **What is the 3rd quartile?**

(a) 55.75 (b) 43.75 (c) 53.15 (d) 53.75

17. **For two non-zero positive numbers, the harmonic mean is 10 and the arithmetic mean is 25. What is the geometric mean?**

(a) 15 (b) 20 (c) 25 (d) 30

18. **In Bangladesh, which ministry present the budget?**

(a) Planning (b) Education (c) Finance (d) Agriculture

19. **Which one represents an infinite population?**

(a) Books in a library (b) Fish in the Pacific Ocean

(c) Members of a sports club (d) Mobile phones in a city

20. **Which statistical method requires bivariate or multivariate data?**

(a) Standard deviation (b) Histogram (c) Regression analysis (d) Median

21. **Population census is –**

(a) Official statistics (b) Non-official statistics (c) Semi-official statistics (d) None of the above

22. **Mode is –**

i. The most frequently occurring value
ii. Unaffected by extreme values
iii. Always unique in a dataset

Which one is correct?

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

23. **The arithmetic mean of a variable is 10. What is the first raw moment around 0?**

(a) 10 (b) -2 (c) 0 (d) 8

24. **The standard deviation of a mesokurtik distribution is 2. What is the value of the 4th central moment?**

(a) 4 (b) 8 (c) 16 (d) 48

25. **If $f_i = 3, 5, 7$ and $x_i = 2, 4, 6$, find $\sum_{i=1}^{3} f_i x_i^2$.**

(a) 260 (b) 280 (c) 344 (d) 320

"Information is the oil of the 21st century, and analytics is the combustion engine." - Peter Sondergaard

Answer Key

1. (a) 0
2. (b) $IQR = Q_3 - Q_1$
3. (a) Nominal
4. (a) 50
5. (c) 44
6. (a) i and ii
7. (b) Mode
8. (c) Range
9. (b) Seasonal Variation
10. (c) Jul
11. (a) 52.5
12. (b) 60
13. (b) A toy store
14. (b) 44
15. (c) 30
16. (d) 53.75
17. (a) 15
18. (c) Finance
19. (b) Fish in the Pacific Ocean
20. (c) Regression analysis
21. (c) Semi-official statistics
22. (a) i and ii
23. (a) 10
24. (d) 48
25. (c) 344