Sylhet Cadet College

Half-Yearly Examination - 2023

Class: XI

Subject: Statistics First Paper (MCQ) **Set: C**

Time: 20 minutes **Subject Code: 129** **Full Marks: 25**

Answer all the questions. Each question is worth one (1) mark.

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1. **If** $\sum_{i=1}^{20} x_i^2 = 20$ **and** $\sum_{i=1}^{20} x_i = 30$**, what is the value of** $\sum_{i=1}^{20} x_i^2 + \sum_{i=1}^{20} x_i + 100$**?**

   (a) 130 (b) 200 (c) 150 (d) 2130

2. **A subset of a population is called–**

   (a) Constant (b) Variable (c) Sample (d) Scale

3. $If\, x_1 = 2, x_2 = -3, x_3 = 7$**, and** $x_4 = 12, \sum_{i=1}^{4} x_i^2 = ?$

   (a) 26 (b) 106 (c) 206 (d) 216

4. **Which one falls in the category of interval scale?**

   (a) Temperature (b) Speed (c) Distance (d) Film rating

5. **Which is a discrete variable?**

   (a) Weight (b) Amount of rainfall (c) Distance (d) Grade in a subject

6. **Which one is product of square?**

   (a) $\prod x_i^2$ (b) $(\prod x_i)^2$ (c) $\sum x_i^2 \times \sum x$ (d) $\sum x_i^2$

7. **How many measure of central tendency are there?**

   (a) 2 (b) 3 (c) 4 (d) 5

8. **Which one is smallest?**

   (a) $\sum_{i=1}^{n}(X_i - Median)^2$ (b) $\sum_{i=1}^{n}(X_i - \bar{X})^2$ (c) $\sum_{i=1}^{n}(X_i - \sigma)^2$ (d) $\sum_{i=1}^{n}(X_i - Mode)^2$

9. **Which measure of central tendency is suitable for qualitative variable?**

   (a) Arithmetic Mean (b) Harmonic Mean (c) Quadratic Mean (d) Mode

10. **Inappropriate for algebraic analysis–**

    i. Median
    ii. Mode
    iii. Geometric Mean

    Which one is true?

    (a) i (b) ii (c) i & ii (d) ii & iii

Answer the next two questions based on the following information

Accident	4	6	7	8	9
Frequency	2	0	4	4	1

11. **Fifth Decile is –**

    (a) 0 (b) 8 (c) 7 (d) 6

12. **Which of the following is mode?**

    (a) 4 (b) 8 (c) 0 (d) 7

13. **Which data set is suitable for Geometric Mean?**

    (a) $1, -1, 2, 4, 6, 7$ (b) $1, 2, 4, 8, 16, 32$ (c) $0, 1, 2, 3, 4, 6$ (d) $1, 1, 2, 3, 4, 4, 5$

14. **Which of the following may be used to determine mode?**

    (a) Histogram (b) Frequency Curve (c) Ogive (d) Frequency Polygon

15. **Which relationship is correct?**

    (a) $AM \times GM = HM^2$ (b) $AM \times HM = GM^2$ (c) $AM \times HM = GM^3$ (d) $AM \div GM = HM^2$

16. **In case of positive skewness, which one is correct?**

    (a) $Mean > Median > Mode$ (b) $Mean < Median < Mode$

    (c) $Mean = Median = Mode$ (d) $Mean > Median < Mode$

17. **The first raw moment about 3 is -5. What is the value of arithmetic mean?**
    (a) 2 (b) -2 (c) 0 (d) 8

18. **For a symmetrical distribution,** $\beta_1 =$
    (a) 1 (b) -1 (c) 0 (d) 3

19. **For a mesokurtik distribution,** $\beta_2 = --$
    (a) 0 (b) -3 (c) 3 (d) 1

20. **Moments can be–**
    i. positive
    ii. not negative
    iii. positive or negative
    Which one is correct?
    (a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

21. **First moment around a is equal to –**
    (a) 1 (b) 0 (c) -1 (d) $\bar{x} - a$

22. **Which component involves period more than one (01) year?**
    (a) Seasonal Variation (b) Cyclic Variation (c) Irregular Variation (d) Random Variation

23. **Which measure is unit-free?**
    (a) Range (b) Mean deviation (c) Standard deviation (d) Coefficient of variation

    Answer the next two questions based on the following table:

Year	2007	2008	2009	2010	2011	2012
Sales	5	35	34	40	42	204

24. **In Semi-Average method, what is the 2nd average?**
    (a) 74 (b) 24.67 (c) 95.33 (d) 28

25. **What is the last value of 3-yearly moving average?**
    (a) 93.55 (b) 95.53 (c) 95.33 (d) 59.33

"Maturity is the capacity to endure uncertainty"–John Finley

Answer Key

1. (c) 150
2. (c) Sample
3. (c) 206
4. (a) Temperature
5. (d) Grade in a subject
6. (a) $\prod x_i^2$
7. (d) 5
8. (a) $\sum_{i=1}^{n}(X_i - Median)^2$
9. (d) Mode
10. (c) i & ii
11. (c) 7
12. (b) 8
13. (b) $1, 2, 4, 8, 16, 32$
14. (a) Histogram
15. (b) $AM \times HM = GM^2$
16. (a) $Mean > Median > Mode$
17. (b) -2
18. (c) 0
19. (c) 3
20. (b) i and iii
21. (d) $\bar{x} - a$
22. (b) Cyclic Variation
23. (d) Coefficient of variation
24. (c) 95.33
25. (c) 95.33