

**Sylhet Cadet College**  
**Model Test Examination - 2023**  
**Class: HSC**

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

**Time: 25 minutes**

**Subject Code: 129**

**Full Marks: 25**

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

1. **For which variable, determining number of terms is not possible?**  
(a) Discrete variable      (b) Continuous variable      (c) Quantitative variable      (d) Qualitative variable
2. **In which scale of measurement, zero is regarded as true zero?**  
(a) Nominal scale      (b) Interval scale      (c) Ratio scale      (d) Ordinal scale
3. **Which is a discrete variable?**  
(a) Weight      (b) Amount of rainfall      (c) Distance      (d) Grade in a subject
4. **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
5. **Which one falls in the category of interval scale?**  
(a) Temperature      (b) Speed      (c) Distance      (d) Film rating
6. **In presence of negative values, which measure is not usable?**  
(a) Arithmetic Mean      (b) Geometric Mean      (c) Quadratic Mean      (d) Harmonic Mean
7. **Which one is not a proper measure of central tendency?**  
(a) 2nd Quartile      (b) Third Decile      (c) 3rd Quintile      (d) 110th Percentile
8. **When is the relationship  $AM = HM = GM$  true?**  
(a) All values are equal      (b) The values form a geometric progression  
(c) The values form an arithmetic progression      (d) All values are distinct
9. **In the presence of outlier(s), which measure of central tendency is suitable?**  
(a) Arithmetic mean      (b) Median      (c) Quadratic mean      (d) Power mean
10. **If a rate is defined as  $R = \frac{c}{d}$ , where c is constant, then which measure is perfect?**  
(a) Weighted arithmetic mean      (b) Harmonic mean  
(c) Quadratic mean      (d) Weighted geometric mean
11. **Which measure is not used in determining skewness?**  
(a) Arithmetic Mean      (b) Geometric Mean      (c) Median      (d) Mode
12. **The arithmetic mean of first n natural numbers-**  
(a)  $\frac{n}{2}$       (b)  $\frac{n+1}{2}$       (c)  $\frac{n^2}{2}$       (d)  $\frac{n^2-1}{2}$   
**Answer the next two questions as per the following information.**  
42 44 59 64 70 72 74 91 94 are 9 values.
13. **What is the 50th percentile?**  
(a) 64      (b) 70      (c) 72      (d) 71
14. **Below which value lie 70 percent values?**  
(a) 42      (b) 44      (c) 59      (d) 74
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. **In a symmmatric distribution–**
  - i. Arithmetic Mean = Mode = Median
  - ii.  $Q_2 - Q_1 = Q_3 - Q_2$
  - iii.  $Q_1 - X_L = X_H - Q_3$

Which one is true?

(a) i & ii      (b) ii & iii      (c) i & iii      (d) i, ii & iii
17. **First moment around zero is –**  
(a) 0      (b) 1      (c) -1      (d) Arithmetic Mean

18. Which is not used in constructing Box & Whisker Plot?  
 (a) Mode (b)  $X_L$  (c)  $Q_1 \& Q_3$  (d)  $Q_1, Q_2 \& Q_3$
19. Which might have a negative value?  
 (a)  $\mu_4$  (b)  $\mu_3$  (c)  $\mu'_2$  (d)  $\mu_2$
20. For a data,  $Q_3 = 41.6, Q_1 = 17.2, Median = 29, \& AM = 30$ ; What is Coefficient of skewness?  
 (a) 24.4 (b) 1 (c) 0.03 (d) 29.45
21.  $\sqrt{\beta_1} = -0.23$  implies—  
 (a) Left Skew (b) Symmetry (c) Right Skew (d) Mesokurtic
22. Which is not a method of finding general trend?  
 (a) Graphical Method (b) Moving Average (c) Semi-Average (d) Moving Median

Answer the next two questions based on the following table:

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

23. In Semi-Average method, what is the 2nd average?  
 (a) 74 (b) 24.67 (c) 95.33 (d) 28
24. For this data, which method would give the best measure of trend?  
 (a) 3-yearly Moving Average (b) 4-yearly Moving Average  
 (c) Semi-Average (d) Graphical Method
25. which component of time series represents a natural disaster?  
 (a) Seasonal Variation (b) General Trend (c) Irregular Variation (d) Cyclic Variation

Answer Key

- |                             |  |                                 |
|-----------------------------|--|---------------------------------|
| 1. (b) Continuous variable  | 10. (b) Harmonic mean                      | 18. (a) Mode                    |
| 2. (c) Ratio scale          | 11. (b) Geometric Mean                     | 19. (b) $\mu_3$                 |
| 3. (d) Grade in a subject   | 12. (b) $\frac{n+1}{2}$                    | 20. (d) 29.45                   |
| 4. (c) 206                  | 13. (b) 70                                 | 21. (a) Left Skew               |
| 5. (a) Temperature          | 14. (d) 74                                 | 22. (d) Moving Median           |
| 6. (b) Geometric Mean       | 15. (c) $\frac{\mu_2}{\bar{x}} \times 100$ | 23. (c) 95.33                   |
| 7. (d) 110th Percentile     | 16. (d) i, ii & iii                        | 24. (a) 3-yearly Moving Average |
| 8. (a) All values are equal | 17. (d) Arithmetic Mean                    | 25. (c) Irregular Variation     |
| 9. (b) Median               |  |                                 |