

Sylhet Cadet College
Model Test Examination - 2023
Class: HSC
Subject: Statistics First Paper (MCQ)
Subject Code: 129

Time: 25 minutes

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) μ_4 (b) μ_3 (c) μ'_2 (d) μ_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

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|-----------------------------|--|---------------------------------|
| 1. (b) Continuous variable | 10. (b) Harmonic mean | 18. (a) Mode |
| 2. (c) Ratio scale | 11. (b) Geometric Mean | 19. (b) μ_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 | | |