**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 $x_4 = 12, \displaystyle\sum_{i=1}^{4} x_i^2 = ?$**
   (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 symmatric 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 values are 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

2. (c) Ratio scale

3. (d) Grade in a subject

4. (c) 206

5. (a) Temperature

6. (b) Geometric Mean

7. (d) 110th Percentile

8. (a) All values are equal

9. (b) Median

10. (b) Harmonic mean

11. (b) Geometric Mean

12. (b) $\frac{n+1}{2}$

13. (b) 70

14. (d) 74

15. (c) $\frac{\mu_2}{\bar{x}} \times 100$

16. (d) i, ii &iii

17. (a) 0

18. (a) Mode

19. (b) $\mu_3$

20. (d) 29.45

21. (a) Left Skew

22. (d) Moving Median

23. (c) 95.33

24. (a) 3-yearly Moving Average

25. (c) Irregular Variation