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

1. **In which scale of measurement, zero is regarded as true zero?**
   (a) Nominal scale   (b) Interval scale   (c) Ratio scale   (d) Ordinal scale

2. **For which variable, determining number of terms is not possible?**
   (a) Discrete variable   (b) Continuous variable   (c) Quantitative variable   (d) Qualitative variable

   Answer the next three question based on the following information.

   A farmer collects growth (in cm) of 10 plants in a month and finds that
   $\sum x_i = 7$ **and** $\sum x_i^2 = 15$

3. **What is the value of $\sum(x_i + 4)$?**
   (a) 23   (b) $\sum x_i + 4n$ (c) 22   (d) 11

4. **What is the value of $\sum(x_i - 4)^2$?**
   (a) 23   (b) 135   (c) 484   (d) 121

5. **If the square of summation is subtracted the sum of square, the value is -**
   (a) -8   (b) 34   (c) 8   (d) -34

6. **Which one is not an example of ratio scale?**
   (a) Room no.   (b) Income   (c) Number of accidents   (d) Weight

7. **Which one falls in the category of interval scale?**
   (a) Speed   (b) Temperature   (c) Distance   (d) Film rating

8. **The arithmetic mean of first n natural numbers-**
   (a) $\frac{n}{2}$ (b) $\frac{n+1}{2}$ (c) $\frac{n^2}{2}$ (d) $\frac{n^2-1}{2}$

9. **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

10. **In the presence of outlier(s), which measure of central tendency is suitable?**
    (a) Arithmetic mean   (b) Median   (c) Quadratic mean   (d) Power mean

11. **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

    Answer the next two questions as per the following information.

    42 44 59 64 70 72 74 91 94 are 9 values.

12. **What is the 50th percentile?**
    (a) 64   (b) 70   (c) 72   (d) 71

13. **Below which value lie 70 percent values?**

    (a) 42   (b) 44   (c) 59   (d) 74

14. **Which measure might have more than one value?**

    (a) Arithmetic mean   (b) Geometric mean   (c) Quadratic mean   (d) Mode

15. **Above which value lie 30% observations?**

    (a) 3rd Quartile   (b) Median   (c) 30th Percentile   (d) 70th percentile

16. **Arithmetic means of three groups having equal no. of items are 30, 32, and 34. What is the combined mean?**

    (a) 30.33   (b) 32.67   (c) 32.00   (d) 33.00

17. **How many types of skewness are there?**

    (a) 1   (b) 2   (c) 3   (d) 4

18. **Which moment may have a negative value?**

    (a) μ_4 (b) μ_3 (c) μ_2 (d) μ_2'

19. **Which moment is equivalent to variance?**

    (a) First raw moment around 0   (b) 2nd central moment

    (c) 2nd raw moment around median   (d) First raw moment around arithmetic mean

20. **In a right-skewed distribution -**

    (a) Average values are very frequent   (b) Low values have very low frequency

    (c) High values have very low frequency   (d) All values have uniform frequency

21. **Which one is included in Five Number Summary?**

    (a) 2nd Central Moment   (b) 1st Raw Moment   (c) Median   (d) Variance

22. **What is the value of first central moment?**

    (a) Variance   (b) Arithmetic mean   (c) Standard deviation   (d) 0

23. **If the first raw moment around 2 is 3, what is the value of $\bar{x}$?**

    (a) 2   (b) 5   (c) 3   (d) 1

24. **Which measure does not depend on change of origin?**

    (a) Arithmetic mean   (b) Standard deviation   (c) Geometric mean   (d) Median

25. **If the first raw moment around 2 is 3, what is it around 0?**

    (a) 3   (b) 0   (c) 6   (d) 5