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

1. **Who is known as the Father of modern statistics?**
   (a) P.C. Mahalanobis   (b) Kazi Motaher Hossain (c) Karl Pearson   (d) R.A. Fisher

2. **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) 230   (d) 2130

3. **A subset of a population is called–**
   (a) Constant   (b) Variable   (c) Sample   (d) Scale

   Answer the next 2 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 $\sum x_i^2 = 15$

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

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

6. **How many measurement scales are there?**
   (a) 2   (b) 3   (c) 4   (d) 5

7. **Which of the following is a continuous variable?**
   (a) Number of goals   (b) Natural number
   (c) Summation of Fibonacci series   (d) Success rate

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

9. **How many sources of data are there?**
   (a) 5   (b) 4   (c) 3   (d) 2

10. **Data obtained through direct observation is called–**
    (a) Primary data   (b) Secondary data   (c) Original Data   (d) Informal data

11. **Who invented Stem and Leaf plot?**
    (a) Karl Pearson   (b) R.A. Fisher   (c) David Cox   (d) John Tukey

12. **How many measure of central tendency are there?**
    (a) 2   (b) 3   (c) 4   (d) 5

13. **Which measure of central tendencyis suitable for qualitative variable?**
    (a) Arithmetic Mean   (b) Harmonic Mean   (c) Quadratic Mean   (d) Mode

    Answer the next two (2) questions based on the following information

Class	≤ 20	20-25	25-50	50-60	69-70	≥ 70
Frequency	5	10	10	7	5	3
Cumulative Frequency	5	15	25	32	37	40

14. **How many values are between 20 and 70?**
    (a) 20   (b) 32   (c) 35   (d) 37

15. **Which one is the median class?**
    (a) 20-25   (b) 25-50   (c) 50-60   (d) 60-70

16. **In presence of negative values, which measure is not usable?**
    (a) Arithmetic Mean   (b) Geometric Mean   (c) Quadratic Mean   (d) Harmonic Mean

17. **For grouped data, which formula is correct for Arithmetic Mean?**

(a) $\bar{x} = \dfrac{\sum f_i x_i}{\sum f_i}$ (b) $\bar{x} = \dfrac{\sum x_i}{N}$ (c) $\bar{x} = \dfrac{\sum f_i x_i}{n}$ (d) $\bar{x} = \dfrac{\sum f_i}{N}$

18. **Arithmetic mean of the series 2, 12, 22, $\cdots$, 92 is–**

(a) 45 (b) 46 (c) 47 (d) 55

19. **Median can be determined from the–**

(a) Histogram (b) Frequency curve (c) Ogive (d) Pie Chart

20. **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) $\frac{\mu_3}{\sigma} \times 100$

21. **Which of the following is the best measure of dispersion?**

(a) Range (b) Mean deviation (c) Standard deviation (d) Coefficient of variation

22. **What is the minimum possible value of standard deviation?**

(a) ∞ (b) -1 (c) 0 (d) 1

23. **For two values, range is found to be 8. What are the values of mean deviation and standard deviation**

(a) (2,4) (b) (4,4) (c) (4,8) (d) (8,8)

24. **What is the standard deviation of first 10 natural numbers?**

(a) 2.87 (b) 3.02 (c) 0 (d) 2.78

25. **Which measure is unit-free?**

(a) Range (b) Mean deviation (c) Standard deviation (d) Coefficient of variation

Answer Key

1. (d) R.A. Fisher

2. (c) 230

3. (c) Sample

4. (a) 23

5. (a) 23

6. (c) 4

7. (d) Success rate

8. (c) Ratio scale

9. (d) 2

10. (a) Primary data

11. (d) John Tukey

12. (d) 5

13. (d) Mode

14. (b) 32

15. (b) 25-50

16. (b) Geometric Mean

17. (a) $\bar{x} = \dfrac{\sum f_i x_i}{\sum f_i}$

18. (c) 47

19. (c) Ogive

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

21. (c) Standard deviation

22. (c) 0

23. (a) (2,4)

24. (a) 2.87

25. (d) Coefficient of variation