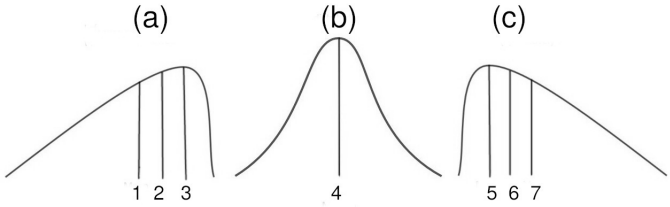


[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point pen, the circle of the letter that stands for the correct/best answer in the “Answer sheet” for the Multiple Choice Questions.]

Candidates are asked not to leave any mark or spot on the question paper.

1. What is the value of  $\sum(x_i + 4)$  if  $x = \{2,3\}$ ?  
(a) 23 (b) 47 (c) 22 (d) 13
2. Which of the following is an example of an ordinal scale?  
(a) Temperature (b) IQ Score (c) Educational Level (d) Weight
3. If  $x_1 = 3, x_2 = -1, x_3 = 2$ , and  $x_4 = 0$ , find  $\sum_{i=1}^4(x_i^3 + 2x_i)$ ?  
(a) 12 (b) 18 (c) 24 (d) 28
4. If  $x_1 = 4, x_2 = 1, x_3 = -2$ , and  $x_4 = 3$ , calculate  $\sum_{i=1}^4(x_i^2 + 4x_i - 1)$ ?  
(a) 16 (b) 24 (c) 34 (d) 50
5. Which is a discrete variable?  
(a) Shoes sizes available in a store (b) Distance between two cities  
(c) Volume of a gas (d) Weight of a parcel
6. Which measure of central tendency is suitable for qualitative variable?  
(a) Arithmetic Mean (b) Harmonic Mean (c) Quadratic Mean (d) Mode

Answer the next THREE questions based on the following information



7. The curve (a) is an example of  
(a) Positive Skew (b) Negative Skew (c) No Skew (d) Not detectable
8. In Image (b), what is denoted by 4th value?  
(a) Mean (b) Median (c) Mode (d) All of the above
9. What is the value corresponding to the position 7?  
(a) Mean (b) Median (c) Mode (d) None of the above
10. A good measure of central tendency -  
i. is loosely defined  
ii. takes into consideration all values  
iii. easily understandable  
Which one is correct?  
(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii
11. The Arithmetic Mean of two numbers is 35. If one number is 50, what is the other number?  
(a) 25 (b) 20 (c) 40 (d) 70
12. What is the arithmetic mean of first n even natural numbers?  
(a)  $\frac{n+1}{2}$  (b)  $n + 1$  (c)  $n$  (d)  $\frac{n-1}{2}$
- Answer the next three questions as per the following information.

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

13. What is the median?  
(a) 64 (b) 70 (c) 72 (d) 71

14. **What is the first quartile?**  
 (a) 42.4 (b) 44.7 (c) 51.5 (d) 64.2
15. **Above which value lie 60% observations?**  
 (a) 70.4 (b) 72.0 (c) 74.6 (d) 66.4
16. **First moment around zero is –**  
 (a) 0 (b) 1 (c) -1 (d) Arithmetic Mean
17. **The arithmetic mean of a variable is 2.6. What is the first raw moment around 6?**  
 (a) 2.2 (b) -3.4 (c) 0.1 (d) 1.8
18. **For a symmetrical distribution,  $\beta_1 =$  —**  
 (a) 1 (b) -1 (c) 0 (d) 3
19.  **$\gamma_1 = 0.43$  implies—**  
 (a) Left Skew (b) Symmetry (c) Right Skew (d) Mesokurtic
20. **In a symmetric distribution—**  
 i. Frequencies of higher values are lower  
 ii. Frequencies of low values are higher  
 iii. Frequencies of low values are lower  
**Which one is correct?**  
 (a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii
21. **Which is an example of time series data?**  
 (a) Number of calls received by a call center each month  
 (b) Height of children at different ages  
 (c) Total salary of all employees at a company  
 (d) Population of different countries in 2020

**Answer the next THREE questions based on the following information**

Month	January	February	March	April	May	June	July	August
Rainfall (mm)	150	120	180	200	160	140	170	190

Table 1: Source: Meteorological Department

22. **What is the semi-average for the second period of the data?**  
 (a) 160 (b) 165 (c) 180 (d) 190
23. **Which type of trend do these rainfall data indicate?**  
 (a) Increasing (b) Decreasing (c) No trend (d) Fluctuating
24. **What is the primary variation component observed in the data?**  
 (a) Seasonal Variation (b) Trend Variation (c) Cyclic Variation (d) Irregular Variation
25. **Which organization typically publishes non-official statistics in the field of health?**  
 (a) UNICEF (b) World Health Organization (WHO)  
 (c) World Bank (d) United Nations (UN)

“We are drowning in information and starving for knowledge.” – Rutherford David Rogers

Answer Key

1. (d) 13

2. (c) Educational Level

3. (c) 24

4. (d) 50

5. (a) Shoes sizes available in a store

6. (d) Mode

7. (b) Negative Skew

8. (d) All of the above

9. (a) Mean
10. (c) ii and iii

11. (b) 20

12. (b)  $n + 1$

13. (b) 70

14. (c) 51.5

15. (c) 74.6

16. (d) Arithmetic Mean

17. (b) -3.4

18. (c) 0
19. (c) Right Skew

20. (b) i and iii

21. (a) Number of calls received by a call center

22. (b) 165

23. (d) Fluctuating

24. (a) Seasonal Variation

25. (a) UNICEF