

Ques Setter	
Moderator	
VP	

**Subject Code:**

1	2	9
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**Set:**

C
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[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 Examination.]

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

1. Which is not an example of shift of scale?

- (a)  $y_i = \frac{x_i}{a}$
- (b)  $y_i = cx_i$
- (c)  $y_i = x_i - 2$
- (d)  $y_i = \frac{cx_i}{d}$

2. Given  $\sum_{i=1}^{10} a_i^2 = 40$  and  $\sum_{i=1}^{10} a_i = 20$ , find the value of  $2 \sum_{i=1}^{10} a_i^2 - 3 \sum_{i=1}^{10} a_i + 60$ .

- (a) 70
- (b) 100
- (c) 80
- (d) 50

3. A researcher collected data on age and income of the people in a city. The variables are –

- i. bi-variate
- ii. quantitative
- iii. qualitative

Which one is correct?

- (a) i and ii
- (b) i and iii
- (c) ii and iii
- (d) i, ii and iii

Answer the next two questions based on the following plot

**Data:** 18, 21, 22, 23, 24, 26, 31, 33, 33, 35, 37, 42

Stem	Leaf
1	8
2	1 2 3 4 6
3	1 3 3 5 7
4	2

**Key:** 2 | 1 means **21**

4. How many data values are greater than 30 in the stem-and-leaf plot?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

5. What is the median of the data shown in the stem-and-leaf plot?

- (a) 26
- (b) 31
- (c) 30
- (d) 29

6. If  $\sum(x_i - k) = 0$ , what is the value of k?

- (a)  $n$
- (b)  $\bar{x}$
- (c)  $x$
- (d)  $n\bar{x}$

7. Median is –

- i. Affected by extreme values
- ii. Rigidly defined
- iii. Suitable for open-ended distributions

Which one is correct?

- (a) i and ii
- (b) i and iii
- (c) ii and iii
- (d) i, ii and iii

8. Which of the following may be used to determine mode?

- (a) Histogram
- (b) Frequency Curve
- (c) Ogive
- (d) Frequency Polygon

9. What is the minimum possible value of standard deviation?  
 (a)  $\infty$  (b) -1 (c) 0 (d) 1
10. The mean and coefficient of variation of a distribution are 5 and 30%, respectively. What is the value of standard deviation?  
 (a) 1.5 (b) 6.5 (c) 7.6 (d) 10.2

Answer the next two questions based on the following information

The temperatures (in  $^{\circ}C$  of two cities in a country are 30 and 35.

11. What is their Mean deviation?  
 (a) 1.2 (b) 2.5 (c) 3.0 (d) 5.5
12. What is the coefficient of variation?  
 (a) 2.7% (b) 8.3% (c) 5.8% (d) 7.7%

Answer the next two questions based on the following information

A study was conducted to find the impact of study hour on students' GPA and the following was found:

$$\sum (x_i - \bar{x})(y_i - \bar{y}) = 30, \sum (x_i - \bar{x})^2 = 45, \text{ and } \sum (y_i - \bar{y})^2 = 55$$

13. What is the value of correlation coefficient?  
 (a) 0.50 (b) 0.60 (c) -0.60 (d) -0.50
14. What is the value of  $b_{yx}$ ?  
 (a) 0.58 (b) -0.67 (c) 0.67 (d) -1.75

SAQ  $10 \times 1 = 10$

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|--|---|
| 1. If the scores of five students in a test are 78, 85, 92, 88, 95, find $\sum_{i=1}^5 (x_i^2 - 2x_i + 3)$ | 1 |
| 2. What is an open-ended distribution?   | 1 |
| 3. Does Median lie in the data set from which it is calculated?  | 1 |
| 4. If $\bar{X} = 25, CV = 50\%, \sigma^2 = ?$  | 1 |
| 5. Which Percentile is equal to 3rd Quartile?  |   |
| 6. What is the variance of first 5 natural numbers?  |   |
| 7. What does $\gamma_2 > 0$ imply?   | 1 |
| 8. Which measure of dispersion is suitable for an open-ended distribution? _____                           |   |
| 9. What is the range of the regression coefficient? —  | 1 |

“Quote”  
 – Author