

Class: X
Subject: Math's
Topic: Statistics
No. of Questions: 20
Duration: 60 Min
Maximum Marks: 60

1. The mean of five numbers is 18. If one number is excluded, then their mean is 16, the excluded number is _____.
- A. 24
 - B. 26
 - C. 28
 - D. 25

Solutions: B

$$5 \times 18 - 4 \times 16 = 26$$

2. The mean of $\frac{1}{3}, \frac{3}{4}, \frac{5}{6}, \frac{1}{2}$ and $\frac{7}{12}$, is _____.
- A. $\frac{2}{5}$
 - B. $\frac{3}{5}$
 - C. $\frac{1}{5}$
 - D. None of these

Solutions: B

Add all and divide by 5.

3. The mean weight of a class of 34 students is 46.5 kg. If the weight of the teacher is included, the mean rises by 500 g. Then the weight of the teacher is _____.
- A. 175 kg
 - B. 62 kg
 - C. 64 kg
 - D. 72 kg

Solutions: C

$$35 \times 47 - 34 \times 46.5 = 64.$$

4. A formula to find the mean of a frequency distribution by the step-deviation method is _____.

- A. $I + \frac{\frac{N}{2} - F}{f} \times h$
- B. $A + h \times \frac{\sum f_i u_i}{N}$
- C. $I + \frac{f - f_1}{2f - f_1 - f_2} \times h$
- D. Both (A) and (B)

Solutions: B

5. If 6, 4, 8 and 3 occur with frequencies 4, 2, 5 and 1 respectively, then the arithmetic mean is _____.
- A. 6.25
B. 6.75
C. 6.5
D. 6

Solutions: A

$$(6 \times 4 + 4 \times 2 + 8 \times 5 + 3 \times 1) / 12 = 75 / 12 = 6.25$$

6. The mean of 9 observations is 36. If the mean of the first 5 observations is 32 and that of the last 5 observations is 39, then the fifth observation is _____.
- A. 28
B. 31
C. 43
D. 37

Solutions: B

First five + Last Live - 9 observations will give 5th obs. as it is being count twice.
 $5 \times 32 + 5 \times 39 - 9 \times 36 = 31$

7. The average of 11 results is 50. If the average of the first six results is 49 and that of the last six is 52, then the sixth result is _____.
- A. 53
B. 54
C. 55
D. 56

Solutions: D

Same logic as used in question number 5

8. The average age of 5 teachers is 28 years. If one teacher is excluded the mean gets reduced by 2 years. The age of the excluded teacher is _____.
- A. 26 years
 - B. 33 years
 - C. 36 years
 - D. 35 years

Solutions: C
 $5 \times 28 - 4 \times 26 = 36$

9. Which of the following is not a measure of central tendency?
- A. Mean
 - B. Median
 - C. Mode
 - D. Standard deviation

Solutions: D
3 M's are measures of central tendency

10. The median of a given frequency distribution is found graphically with the help of _____.
- A. Histogram
 - B. Frequency curve
 - C. Frequency polygon
 - D. Ogive

Solutions: D
Fact. Intersection of two types give median.

11. The algebraic sum of the deviations of a frequency distribution from its mean is _____.
- A. Always positive
 - B. Always negative
 - C. 0
 - D. A non-zero number

Solutions: C
 $x_1 + x_2 + x_3 + \dots + x_n = nX$ where X is mean
 $x_1 - X + x_2 - X + \dots + x_n - X = 0$

12. The average temperatures of Tuesday, Wednesday and Thursday was 42°C . The average temperature of Wednesday, Thursday and Friday was 47°C . If the temperature on Tuesday was 43°C , then the temperature on Friday was _____.
- A. 58°C
 - B. 50°C
 - C. 53°C
 - D. 49°C

Solutions: A
 $T + W + Th = 3 \times 42 \dots \dots \dots (1)$
 $W + Th + F = 3 \times 47 \dots \dots \dots (2)$
subtract 2 from 1
 $T - F = -15$
 $F = T + 15 = 43 + 15 = 58$

13. The sum of the deviations of a set of values x_1, x_2, \dots, x_n measured from 50 is -10 and the sum of deviations of the values from 46 is 70. The mean is _____.
- A. 49
 - B. 49.5
 - C. 49.75
 - D. 50

Solutions: B

n terms and let X be mean

$$n(X-50) = -10$$

$$n(X-46) = 70$$

Divide two equations and get X .

14. The mean of 20 observations is 12.5. By error, one observation was noted as -15 instead of 15. Then the correct mean is _____.
- A. 11.75
 - B. 11
 - C. 14
 - D. 13

Solutions: C

Sum of 20 obs. = 250

Instead of 15 one observation was added as -15

$$\text{Correct sum } 250 + 15 - (-15) = 280$$

$$\text{Mean} = 14.$$

15. A bus maintains an average speed of 60 km/hr while going from P to Q and maintains an average speed of 90 km/hr while coming back from Q to P. The average speed of the bus is _____.
- A. 75 km/hr
 - B. 72 km/hr
 - C. 70 km/hr
 - D. 30 km/hr

Solutions: B

Let d be distance from P to Q

Time taken while going from p to q = $d/60$

Time taken while going from q to p = $d/90$

Average speed = Total distance / total time

Common mistake Average speed = Sum of speeds / Number of observations given. Please avoid this.

16. The mean of a data is 'p'. If each observation is multiplied by 3 and then 1 is added to each result, then the mean of the new observations so obtained is _____.
- A. p
 - B. 3p
 - C. p + 1
 - D. 3p + 1

Solutions: D

When multiplied mean also becomes 3 times. When 1 is added to each term 1 also gets added to mean.

17. For a frequency distribution, mean, median and mode are connected by which of the following relations?
- A. Mode = 3 Mean - 2 Median
 - B. Mode = 2 Median - 3 Mean
 - C. Mode = 3 Median - 2 Mean
 - D. Mode = 3 Median + 2 Mean

Solutions: C
Standard Result

18. 'More than' ogive is ____.
- A. An ascending curve
 - B. A descending curve
 - C. First ascending curve and then descending curve
 - D. First descending curve and then ascending curve

Solutions: B
Frequency maximum at beginning and decreases as graph continues giving a downward trend.

19. The mean of all the factors of 24 is
- A. 7.5
 - B. none of these
 - C. 7
 - D. 24

Solutions: A
Factors of 24 – 1,2,3,4,6,8,12,24
Mean = $(1+2+3+4+6+8+12+24)/8 = 60/8 = 7.5$

20. The marks obtained by 9 students in Mathematics are 59, 46, 30, 23, 27, 40, 52, 35 and 29. The median of the data is
- A. 35
 - B. 27
 - C. 40
 - D. 33.5

Solutions: A
Arrange in ascending or descending order