**MATHEMATICS**

**STATISTICS**

1. Find the mean of the following distribution

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | 4 | 6 | 9 | 10 | 15 |
| f | 5 | 10 | 10 | 7 | 8 |

(A) 9

(B) 15

(C) 18

(D) none of these

ANS : A

Find the mean of the following distribution

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| X | 10 | 30 | 50 | 70 | 89 |
| f | 7 | 8 | 10 | 15 | 10 |

(A) 45 (B) 65

(C) 55 (D) 85

ANS : C

3. If the median of the following frequency distribution is 46, find the missing frequencies

|  |  |
| --- | --- |
| **Variable** | **Frequence** |
| 10-20 | 12 |
| 20-30 | 30 |
| 30-40 | ? |
| 40-50 | 65 |
| 50-60 | ? |
| 60-70 | 25 |
| 70-80 | 18 |
| Total | 229 |

(A) 33, 55 (B) 32, 35

(C) 34, 45 (D) none of these

ANS : C

4. Find the mode of the following data

26, 16, 19, 48, 19, 20, 34, 15, 19, 20, 21, 24, 19, 22, 16, 18, 20, 16, 19

(A) 48 (B) 20

(C) 19 (D) 24

ANS : C

5. Find the value of x, if the mode of the following date is 25 :

15, 20, 25, 18, 14, 15, 25, 15, 18, 16, 20, 25, 20, x, 18

(A) 20 (B) 14

(C) 18 (D) 25

ANS : D

6. The median of the first ten prime numbers is:

(A) 7 (B) 12

(C) 11 (D) 5

ANS : B

7. Mean of all possible factors of 10 is

(A) 6 (B) 2

(C) 4.5 (D) 5

ANS : C

8. The sum of the deviations of a set of n values measured from 50 is –10 and that of the values from 46 is 70. Then the mean of the data will be

(A) 40.5 (B) 46.5

(C) 42.5 (D) 49.5

ANS : D

9. The mean of 10, 12, 16, 20, p and 26 is 17. Then the value of p is

(A) 10 (B) 18

(C) 25 (D) 14

ANS : B

10. The difference between the highest observation and the lowest observation is known as

(A) Class Mark (B) Class Size

(C) Range (D) Limit

ANS : C

11. Which of the following is a measure of central tendency ?

(A) Frequency (B) Cumulative frequency

(C) Mean (D) Class limit

ANS : C

12. Class mark of a class is obtained by using –

(A) Class mark (B) [upper limit – lower limit]

(C) [upper limit + lower limit] (D) [upper limit + lower limit] – 1

ANS : C

13. The value of is –

(A)  (B) 2  (C) n  (D) 

ANS : C

14. The mean of the following data 1<sup>2</sup>, 2<sup>2</sup>, 3<sup>2</sup>,……n<sup>2</sup> is –

(A)  (B)  (C)  (D) 

ANS : A

15.The mean of following distribution is –

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x­i | 10 | 12 | 15 | 25 |
| fi | 2 | 3 | 7 | 8 |

(A) 18.50 (B) 18.50 (C) 18.15 (D) 18.25

ANS : B

16.The mean of following data is 18.75 then the value of p is –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x­i | 10 | 15 | p | 25 | 30 |
| fi | 5 | 10 | 7 | 8 | 2 |

(A) 21 (B) 20.6 (C) 20 (D) 22

ANS : C

17. To find mean, we use the formula.

(A)  (B)  (C)  (D) 

ANS : C

18. Which of the following can not be determined graphically –

(A) Mean (B) Median (C) Mode (D) Standard deviation

ANS : A

19. If the median of the following data is 40 then the value of p is –

|  |  |
| --- | --- |
| Class | frequence |
| 0-10 | 5 |
| 10-30 | 15 |
| 30-60 | 30 |
| 60-80 | P |
| 80-90 | 2 |

(A) 7 (B) 8 (C) 9 (D) 7.6

ANS : B

20. Which of the following is true?

(A) Mode = 2median – Mean (B) Mode = 3median + 2Mean

(C) Mode = 3median – 2Mean (D) None of these

ANS : C

21. Mode is –

(A) Most frequent value (B) Least frequent value

(C) Middle most value (D) None of these

ANS : A

22. Which of the following is true –

(A) Mode = 2median + Mean (B) Median = Mode + [Mean – Median]

(C) Mean = Mode + [Median – Mode] (D) Median = Mode + [Mean +Median]

ANS : C

23. In the formula for mode of a grouped data, mode = , where symbols have their usual meaning f0 represents :

(A) Frequency of modal class

(B) Frequency of median class

(C) Frequency of the class preceding the modal class

(D) Frequency of class succeeding the modal class

ANS : C

24. Median of a given frequency distribution is found with the help of a –

(A) Bar graph (B) Ogive (C) Histogram (D) None of these

ANS : B

25. The measure of central tendency which is given by the x-coordinate of the point of intersection of the ‘more than’ o give and ‘less than’ o give is –

(A) Mean (B) Median (C) Mode (D) None of these

ANS : B

26 The median of following series if 520, 20, 340, 190, 35, 800, 1210, 50, 80

(A) 1210 (B) 520 (C) 190 (D) 35

ANS : C

27. If the arithmetic mean of 5, 7, 9 x is9 then the value of x is

(A) 11 (B) 15 (C) 18 (D) 16

ANS : B

28. The mode of the distribution 3, 5, 7, 4, 2, 1, 4, 3, 4 is

(A) 7 (B) 4 (C) 3 (D) 1

ANS : B

29. If the first five elements of the set x<sub>1</Sub>, x<sub>2</Sub>,...x<sub>10</Sub> are replaced by xi + 5, i = 1, 2, 3, 4, 5 and next five elements are replaced by x<sub>j</Sub> - 5, j = 6, 7, ....10 then the mean will change by

(A) 0 (B) (C) 10 (D) 25

ANS : A

30. If the mean and median of a set of numbers are 8.9 and 9 respectively, then the mode will be

(A) 7.2 (B) 8.2 (C) 9.2 (D) 10.2

ANS : C

31. If the less than cumulative frequency of a class is 50 and that of the previous class is 30, then the frequency of that class is

(A) 10 (B) 20 (C) 40 (D) 30

ANS : B

32. If the median of the data, x<sub>1</Sub>, x<sub>2</Sub>, x<sub>3</Sub>, x<sub>4</Sub>, x<sub>5</Sub>, x<sub>6</Sub>, x<sub>7</Sub>, x<sub>8</Sub> is a, then find the median of the data x<sub>3</Sub>, x<sub>4</Sub>, x<sub>5</Sub>, x<sub>6</Sub> (where x<sub>1</Sub> < x<sub>2</Sub> < x<sub>3</Sub> < x<sub>4</Sub> < x<sub>5</Sub> < x<sub>6</Sub> < x<sub>7</Sub> < x<sub>8</Sub>)

(A) a (B)  (3C  (D) cannot say

ANS : A

33. If the average of a, b, c and d is the average of b and c, then which of the following is necessarily true?

(A) (a + d) = (b + c) (B) (a + b) = (c + d) (C) (a – d) = (b – c) (D) 

ANS : A

34. If a < b < c < d and a, b, c, d are non-zero integers, the mean of a, b, c, d is 0 and the median of a, b, c, d is 0, then which of the following is correct?

(A) b = –c (B) a = –d (C) both (1) and (2) (D) none of these

ANS : C

35. The mean of the above data is 5.5. Find the missing frequency (y) in the above distribution



(A) 6 (B) 8 (C) 15 (D) 11

ANS : A

36. A sequence, a, ax, ax<sup>2</Sup>, ............., ax<sup>n</Sup>, has odd number of terms. Find its median

(A) ax<sup>n-1</Sup> (B) 0 (C)  (D) 

ANS : C

37. The mean of the data x, x + a, x + 2A, x + 3A, ........ (2N + 1 terms) is

(A) x + (n – 1)a (B) x + (n + 1)a (C) x + (n + 2)a (D) x + an

ANS : D

38. Range of 14, 12, 17, 18, 16 and x is 20. Find x(x > 0)

(A) 2 (B) 28 (C) 32 (D) cannot be determined

ANS : C

39. The range of 15, 14, x, 25, 30, 35 is 23. Find the least possible value of x.

(A) 14 (B) 12 (C) 13 (D) 11

ANS : B

40. If x < y < 2x ; the median and mean of x, y and 2x are 27 and 33 respectively, then find the mean of x and y.

(A) 23.5 (B) 24 (C) 23 (D) 25.5

ANS : D

41. Find the simple and weighted mean of the first 'n' natural numbers, the weights being the corresponding numbers.

(A) ,  (B)  ,  (C)  (D) 

ANS : C

42. In the formula,  =  for finding the mean of the grouped data, the di's are the deviations from A of

(A) lower limits of the classes (B) upper limits of the classes

(C) midpoints of the classes (D) none of these

ANS : C

43. The mean of the following distribution is 5, then find the value of B.



(A) 10 (B) 6 (C) 8 (D) None

ANS : B

44If the mean of the numbers 7, 3, 8, 4, x, 7, 9, 7 and 12 is 7, then the difference between the median and the mode of the numbers 12, 10, 8, 10, x, 7, 6, 8 and 6 is :

(A) 0 (B) 1 (C) 2 (D) 3

ANS : C

45. If the mean of x and is 'M', then the mean of x6 and is ?

(A) M<sup>6</sup> (B) (16M<sup>4</sup> + 16M<sup>2</sup> – 1)

(C)(2M<sup>2</sup>– 1) (16M<sup>4</sup> – 16M<sup>2</sup> + 1) (D) (2M<sup>2</sup> – 1) (16M<sup>4</sup> + 16M<sup>2</sup> – 1)

ANS: C

46. The mode of the distribution 3, 5, 7, 4, 2, 1, 4, 3, 4 is

(A) 7 (B) 4 (C) 3 (D) 1

Sol . The highest occurrence of the term = Mode

As 4 is occurring the most

So, Mode = 4

ANS : B

47. The relation between mean, mode and median is

(A) mode = (3  mean) – (2 × median) (B) mode = (3 × median) – (2 × mean)

(C) median = (3 ×mean) – (2 × mode) (D) mean = (3 × median) – (2 × mode

ANS : B

48. Look at the frequency distribution table given below :



The median of the above data is

(A) 56.5 (B) 57.5 (C) 58.4 (D) 59

ANS : B

49. The arithmetic mean of the scores of a group of students in a test was 52. The brightest 20% of them secured a mean score of 80 and the dullest 25% secured a mean score of 31. Then the mean score of remaining 55% is

(A) 45 (B) 50 (C) 51.4 approx. (D) 54.6 approx

ANS : C

50. The mode of the following series is 36. Find the missing frequency in it

|  |  |
| --- | --- |
| Class interval | Frequence |
| 0-10 | 8 |
| 10-20 | 10 |
| 20-30 | …. |
| 30-40 | 16 |
| 40-50 | 12 |
| 50-60 | 6 |
| 60-70 | 7 |

(A) 10 (B) 15 (C) 16 (D) 12

ANS : A

51. If the difference of mode and median of a data is 24, then the difference of median and mean is

(A) 12 (B) 24 (C) 8 (D) 36

ANS : A

52. A cricketer has a certain average run for 10 innings. In the 11th inning, he scores 100 runs, and now his average run is increased by 9 runs. Then average of

(A) 10 runs (B) 20 runs (C) 11 runs (D) 21 runs

ANS : A

53. If the mean of three numbers a, b and c is 3, then equals

(A) 71/3 (B) 72/3 (C) 72 (D) 73

ANS : D

54. USING DIRECT METHOD TO FIND THE MEAN OF THE FOLLOWING DATA :



(A) 36.36 (B) 35.36 (C) 36.32 (D) 35.34

ANS : A

55. CALCULATE THE MEAN (USING DIRECT METHOD) OF THE FOLLOWING DATA :



(A) 110.2 (B) 112.5 (C) 112.2 (D) 110.5

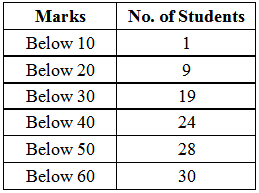
ANS : C

56. USING DIRECT METHOD TO FIND THE MEAN OF THE FOLLOWING DATA :

(A) 50 (B) 54 (C) 51 (D) 53

ANS : D

57.CALCULATE THE MEAN OF THE FOLLOWING :



(A) 50 (B) 30 (C) 27 (D) 28

ANS : D

58. CALCULATE THE MEAN OF THE FOLLOWING :

|  |  |
| --- | --- |
| Marks | No of  students |
| Above 60 | 0 |
| Above 55 | 5 |
| Above 50 | 11 |
| Above 45 | 20 |
| Above 35 | 60 |
| Above 30 | 70 |
| Above 25 | 85 |
| Above 20 | 90 |

(A) 38.67 (B) 34.87 (C) 30.87 (D) 40.87

ANS : A

59. FIND THE MEAN, BY ‘STEP-DEVIATION’ METHOD :



(A) 40 MARKS (B) 41 MARKS (C) 30 MARKS (D) 42 MARKS

ANS : D

60. THE DATA BELOW GIVES THE WEEKLY EARNINGS OF 100 WORKERS IN A FLOUR MILL.



(A) 542.5 (B) 530.5 (C) 540.5 (D) 555.5

ANS : C

61. THE MEAN OF THE FOLLOWING FREQUENCY IS 114. EVALUATE THE MISSING FREQUENCY (X)



(A) X = 15 (B) X = 20 (C) X = 17 (D) X = 25

ANS : A

62. THE FOLLOWING TABLE SHOWS THE AGE DISTRIBUTION OF CASES OF A CERTAIN DISEASES REPORTED DURING A YEAR IN A PARTICULAR CITY.



(A) 32.87 (B) 34.87 (C) 30.87 (D) 40.87

ANS : B

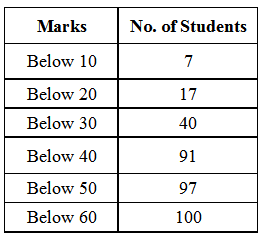
63. Find the mean by Short-Cut method



(A) 70 MARKS (B) 72 MARKS (C) 74 MARKS (D) 71 MARKS

ANS : C

64. Find the mean of the following data



(A) 29.8 MARKS (B) 27.8 MARKS (C) 26.8 MARKS (D) 28.8 MARKS

ANS : A

65. Find the average marks of a student from the following distribution



(A) 51.4 MARKS (B) 50.4 MARKS (C) 52.4 MARKS (D) 49.4 MARKS

ANS : B

66. In the following frequency distribution, the frequency of the class interval (40—50) is missing. It is known that the mean of the distribution is 52. Find the missing frequency.



(A) X = 5 (B) X = 6 (C) X = 7 (D) X = 10

ANS : C

67. The mean of the following distribution is 50. Find the missing frequencies p and q. 

(A) P =28, Q = 20

(B) P =20, Q = 24

(C) P =28, Q = 30

(D) P =28, Q = 24

ANS : D

68. Determine the missing frequency () if the mean of the distribution is 428. 

(A) X = 15 (B) X = 16 (C) X = 14 (D) X = 12

ANS : B

69. The mean of the following frequency table is 53. But the frequencies f1 and f2 in the clases 20–40 and 60–80 are missing. Find the missing frequencies. 

(A) F1 = 18 AND F2 = 20

(B) F1 = 18 AND F2 = 25

(C) F1 = 18 AND F2 = 29

(D) F1 = 20 AND F2 = 29

ANS : C

70. Find the mode from the following data :



(A) RS. 355 (B) RS. 450 (C) RS. 350 (D) RS. 320

ANS : C

71. Find the mode from the following distribution



(A) 706 (B) 707 (C) 710 (D) 760

ANS : A

72. Calculate the mode from the following frequency table :



(A) 61 (B) 62 (C) 60 (D) 50

ANS : B

73. Find the value of the following data :



(A) 40 (B) 48 (C) 45 (D) 40

ANS : B

74. Determine the unknown frequency of the following data if its mode is 54



(A) X = 5 (B) X = 3 (C) X = 2 (D) X = 1

ANS : A

75. Find the mode from the following data :



(A) 52 MARKS (B) 55 MARKS (C) 50 MARKS (D) 40 MARKS

ANS : B

76. The mode of the following distribution is 55. Find the values of x and y.



(A) X = 8, Y = 4 (B) X = 8, Y = 3 (C) X = 8, Y =5 (D) X = 8, Y = 2

ANS : C

77. Find the value of p and q if the mode of the distribution given below is 52.



(A) P= 3, Q = 6 (B) P= 3, Q = 5 (C) P= 2, Q = 3 (D) P= 2, Q = 4

ANS : A

78. Find the median of the following distribution



(A) RS. 450 (B) RS. 470 (C) RS. 440 (D) RS. 430

ANS : B

79. Find the median of the following distribution :



(A) RS. 135 (B) RS. 137 (C) RS. 130 (D) RS. 120

ANS : B

80. Find the median for the following frequency distribution :



(A) 157 CM (B) 187 CM (C) 167 CM (D) 180 CM

ANS : C

81. Calculate the median of the following distribution :



(A) 74.5 CM (B) 70.5 CM (C) 80.5 CM (D) 71.5 CM

ANS : A

82. Find the median of the following distribution



(A) 144.92 (B) 140.92 (C) 144.80 (D) 140.80

ANS : A

83. Calculate the median from the following frequency table:



(A) 60.35 (B) 61.35 (C) 62.30 (D) 61.00

ANS : B

84. Find the median from the following data :



(A) 40 years (B) 42 years (C) 41 years (D) 30 years

ANS : B

85. Calculate the median marks of the following data:



(A) 52.41 (B) 53.30 (C) 53.41 (D) 50.41

ANS : C

86. Find the missing frequency (x) from the following data if n = 95 and the median is 37.25



(A) x = 12 (B) x = 13 (C) x = 10 (D) x = 15

ANS : D

87. If the median of the distribution given below is 28.5, find the values of x and y.



(A) X = 8 AND Y = 7

(B) X = 8 AND Y = 5

(C) X = 5 AND Y = 7

(D) X = 5 AND Y = 5

ANS : A

88. Find the missing frequencies x and y from the following data if n = 230 and the median is 46



(A) X = 30, Y = 18

(B) X = 34, Y = 16

(C) X = 34, Y = 10

(D) X = 30, Y = 16

ANS : B

89. Find the x and y from the given data if median = 32.5



(A) X = 2, Y = 6 (B) X = 3, Y = 3 (C) X = 3, Y = 6 (D) X = 1, Y = 1

ANS : C

90. The runs scored by 8 cricket players in an inning are as follows :

42, 47, 52, 47, 37, 60, 55, 55, 38.

Find mean deviation

(A) 6.31

(B) 2.31

(C) 3.31

(D) 4.41

ANS : A

.

Fill up the blanks in the following table and find the Crude Death Rate.

|  |  |  |
| --- | --- | --- |
| Age Group  (in years) | Population | No.of Deaths |
| 0-10 | 25000 | 300 |
| 10-20 | 35000 | 150 |
| 20-40 | ………... | 100 |
| 40-70 | 15000 | ……. |
| Over 70 | 25000 | 300 |
| Total | 125000 | 1000 |

(A) 4%

(B) 3%

(C) 8 %

(D) 1%

ANS : C

93. Marks of four students are 25, 35, 45 and 55 their mean deviation is :

(A) 10

(B) 1

(C) 0

(D) 40

ANS : A

94. The weight (in kg) of five students are 38, 45, 62, 55, 50. Their mean deviation is :

(A) 50

(B) 10

(C) 6.8

(D) 0

ANS : C

95.The Crude Death Rate (per thousand) of the following date is :<br />

Age group

(in years)

Population

No. of

deaths

0

–

15

3500

200

15

–

30

2500

110

30

–

40

1500

80

40

–

60

2700

120

Over 60

1800

90

(A) 50 (B) 55 (C) 60 (D) 62

ANS : A

96. Find the age Specific Death Rate of group 40 – 60 for the following date:<br />

**Age group**

**(in years)**

**Population**

**(in thousand)**

**No. of**

**death**

20

–

40

2600

9500

40

–

60

3200

16500

Over 60

700

14000

(A) 5.1

(B) 6.2

(C) 4.3

(D) 7.1

ANS : A

97. The population in a town of age group 0 – 15 is 3500 and the number of deaths is 200 in the year 2000, then Crude Death Rate of the city will be :

(A) 5.71

(B) 6

(C) 0.6

(D) 57.1

ANS : A

98. The population of a city in any year was 250000 and number of deaths in that year was 2800. The Crude Death Rate of the city will be :

(A) 89.2

(B) 11.2

(C) 112

(D) 1.12

ANS : B

99. The population of a village in any year was 1025 and number of deaths in that year was 41. The Crude Death Rate will be.

(A) 40

(B) 25

(C) 41

(D) 0.4

ANS : A

100. If mean deviation is 13 and then find the value of =

(A) 40

(B) 45

(C) 50

(D) 35

ANS : C