# CLASS IX– CHAPTER 14 – STATISTICS

Name: Date:

**01.** Find the range of the following data: 25, 20 30, 18, 16, 15
(a). 15 (b). 10 (c). 5 (d). 20

**02.** Find the median of the given data: 7, 8, 7, 7, 9, 10, 13.
(a). 7 (b). 9 (c). 8 (d). 10

**03.** Find the mode of the given data: 7, 9, 11, 13, 9 13, 9, 9, 7, 8.
(a). 10 (b). 9 (c). 11 (d). 8

**04.** Find the mean of the first five multiples of 3?
(a). 9 (b). 12 (c). 14 (d ) None of these

**05.** What is the upper limit of the interval: 20 – 23?
(a). 20 (b). 23 (c). 22 (d). None of these

**06**. What is class size of interval 10, 12, 14, 16, 18?
(a). 2 (b). 1 (c). 10 (d). 18

**07.** Find the class mark of the interval 15.7 – 25.7?
(a). 15.3 (b). 16.3 (c). 17.3 (d). 20.7

**08.** What is the mid – points of class interval 12.3 – 22.3?
(a). 17.3 (b). 15.3 (c). 18.3 (d). 16.3

**09**. What is the class Mark of the interval 15-20?
(a). 15 (b). 20 (c). 17.5 (d). none of these

**10**. What is the range of interval 15-20?
(a). 5 (b). 10 (c). 15 (d). none of these

**11**. What is the class – size of the interval 15-20?
(a). 5 (b). 10 (c). 15 (d). none of these

**12**. Find out the mean of following data. 5, 10, 15, 20, 25, 30,
(a). 16.5 (b). 17.5 (c). 18.5 (d). none of these

**13**. Find the arithmetic mean of first 6 natural no.?
(a). 3.5 (b). 4.5 (c). 2.5 (d). none of these

**14**. What is the mid-point of interval 3-6?
(a). 3.5 (b). 4.5 (c). 5.5 (d). none of these

**15**. Find out the range of the following: 5, 10, 15, 20, 25, 30
(a). 25 (b). 20 (c). 30 (d). none of these

**16**. Find out the mode of the following: 5, 4, 3, 5, 6, 6, 6, 5, 4, 5, 5, 3, 2, 1
(a). 6 (b). 4 (c). 5 (d). none of these

**17**. What is the class size of the intervals 10-20?
(a). 10 (b). 5 (c). 15 (d). 20

**18**. What is the upper class limit of the class 37-43?
(a). 37 (b). 40 (c). 43 (d). none of these

**19**. What is the lower class limit of the class 37-43?

(a). 37 (b). 40 (c). 43 (d). none of these

**20**. Find the median of the following data: 15, 35, 18, 26, 19, 25, 29, 20, 27, 30,

(a). 25.5 (b). 24.5 (c). 26.5 (d). none of these

**Q01**. The mean of 7 observations is 20. If the mean of the first 4 observations is 12 & that of last 4 observations is 28, find the 4th observations?

**Q02**. If mean of 5 observation x, x+4, x+8, x+12, x+16 is 13, find mean of the observations?

**Q03.** The class marks of the observations are 17, 21, 25, 29, 33, 37, 41, 45. Find the class intervals.

**Q04.** The value of ⍰⍰upto 15 decimal places is : 3. 419078023195679

(a). List the digits from 0 to 9 & make frequency distributions of the digit after the decimal points.

(b). What are the most * the least frequently occurring digits?

**Q05.** A random survey of the number of children of various age grout playing in the park was found: Draw a histogram to represent the data above?

| **Age [in years]** | **1 – 2** | **2 – 3** | **3 – 5** | **5 – 7** |
|---|---|---|---|---|
| **No. of children's** | **3** | **5** | **7** | **10** |

**Q06.** (a). Find the mean of the following data: 25, 27, 19, 29, 21, 23, 25, 30, 28, 20.

Show that the sum of deviation of all the observations from the mean is zero.

(b). Find the median of the data given above.

**Q07**. If the mean of the following data is 21. Find the value of P.

| | | | | |
|---|---|---|---|---|
| **7** | **15** | **28** | **5** | **1** |
| **8** | **20** | **7** | **3** | **2** |

**Q08.** In a mathematics test given to 10 students, the following marks [out of 100] are recorded as:

82, 41, 39, 52, 53, 45, 96, 47, 50, 60. Find out the mean & median of the above marks.

**Q09.** The median of the following observation arranged in ascending order is 40.

Find x: 15, 12, 11, 14, x + 2, x + 4, 32, 30, 41, 35

**Q10.** The mean of 20, 8, 12, 13, 15 & P is 30. Find the value of P?

**Q11.** Find the mode of the following data: 14, 25, 14, 14, 25, 24, 20, 28, 18, 20. [2]

**Q12.** Find the median of 5, 7, 10, 9, 5, 12, 15, 12, 18, 20. If 9 is replaced by 14, what will be the new median.

**Q13.** The average mark of boys in an examination is 68 & that of girls in 89. If the average mark of all candidates in that examination is 80, find the ratio of the no. of boys to the number of girls that appeared in the examinations.

**Q14.** The following is the monthly expenditure (Rs.) of tan families of the particular area:

145, 115, 129, 135, 139, 158, 170, 175, 188, 163

(a). Make a frequency distribution by using the following class interval:

100 – 120, 120 – 140, 140 – 160, 160 – 180, 180 – 200.

(b). Construct a frequency polygon for the above frequency distribution.

**Q15.** The mean of 5 numbers is 39. If one number is excluded, their mean is 35, find the excluded number.

**Q16.** If mean of 8 observation x, x+1, x+3, x+4, x+5, x+6, x+7 is 50, find mean of first 5 observation.

**Q17**. The mean of 6 numbers is 30. If one number is excluded, their mean is 24. Find the excluded number.

**Q18**. The median of the observation 11, 12, 14, 18, X+2, X+4, 30, 32, 35, 41, arranged in ascending order is 24. find the value of X.

**Q19**. Find the median of the following data: 25, 34, 31, 23, 22, 26, 35, 28, 20, 32.

**Q20**. In X standard, these are three section A, B, C with 25, 40 And 30 students respectively. The average mark of section A is 70%, of section B is 65% and of section C is 50%. Find the average marks of the entire X standards.

**Q21**. If $\bar{x}$ is a mean of $x_1$, $x_2$, $x_3$ ------- $x_n$ then the mean of $a_x$, $ax_2$ ------- $ax_n$ is a $\bar{x}$, where a is any number different from 2 era i.e. If each observation is multiplied by a non 2 era number a, then the mean is also multiplied by a.

**Q22**. Represent the following data by means of histogram.

| **Weekly Wage[Rs]** | **10-15** | **15-20** | **20-25** | **25-30** | **30-40** | **40-60** | **60-80** |
|---|---|---|---|---|---|---|---|
| **No. of children's** | **7** | **9** | **8** | **5** | **12** | **12** | **5** |

**Q23**. The Mean monthly salary of 10 members of a group is Rs 1445, one more member whose monthly salary is Rs 1500 has joined the group. Find mean monthly salary of II member of the group.

**Q24**. The sum of the deviations of a set of n values $x_1$, $x_2$ ------$x_n$ measured from 50 is –10 and the sum of deviation of the values from 46 is 70. Find the values of n and the mean.

**Q25**. The class marks of a distribution are 26, 31, 41, 36, 46, 51, 56, 61, 66, 71.Find the true class limits.

**Q26**. The marks obtained by 35 student in an examination are given below;
125, 130, 130, 120, 141, 146, 162, 163, 169, 173, 179, 188, 192, 195, 199.
Form a cumulative frequency table with class interval of length 20.

**Q27**. For the following data, draw a histogram and a frequency polygon:

| **Mark** | **0-10** | **10-20** | **20-30** | **30-40** | **40-50** |
|---|---|---|---|---|---|
| **No. of student** | **5** | **10** | **4** | **6** | **7** |

**Q28**. If $\overline{X}$ is the mean of $\bar{n}$ observation, $x_1$, $x_2$ ..... $x_n$, then the mean of $x_1 - a$, $x_2$-a …… $x_n$ - a, is a is $\overline{X} - a$, any real number.

**Q29**. The mean of 16 numbers is 8. If z is added to every number, what will be new mean?

**Q30**. There are 50 students in a class of which 40 are boys and rest girls. The average weight of the class is 44 kg and the average weight of the girls is 40 kg. Find the average weight of the boys.

**Q31**. The means of 100 items was found to be 300. If at the time of calculation two items were wrongly taken as 32 and 12 instead of 23 and 11, find the correct mean.

**Q32**. The mean of 10 numbers is 20. If 8 is subtracted from every number, what will be the

mew mean?

**Q33**. Calculate the mean from the given data:

| Mark | 15 | 20 | 25 | 30 | 35 | 40 |
|---|---|---|---|---|---|---|
| No. of student | 6 | 7 | 12 | 14 | 15 | 6 |

**Q34**. The jot lowing table gives the mark scored by 50 students in an entrance examination:

| Mark | 0-20 | 20-40 | 40-60 | 60-80 | 80-100 |
|---|---|---|---|---|---|
| No. of student | 7 | 6 | 13 | 16 | 8 |

From this table from: (i) the less then series and (ii) the more then series.

**Q35**. Find the sum of the deviations of the variety values 3, 4, 6, 8, 14 from their mean.

**Q36**. The mean of 40 observations was 200. It was detected on rechecking that the value of 65 was wrongly copied as 25 for computation of mean. Find the correct mean.

**Q37**. It $\overline{X}$ is the mean of n observation $x_1, x_2$ .....$x_n$, then prove that $\sum_{i=0}^{n} (Xi - \overline{X}) = 0$ i.e. the algebraic sum of deviations from mean is zero.

**Q38**. The mean of n observation $x_1, x_2$.....$x_n$, is $\overline{X}$ It (a-b) is added to each of the observation, show that the mean of the near set of observation is $\overline{X}$ + (a-b).

**Q39**. If x1, x2 .....xn are n values of a variable x such that $\sum_{i=1}^{n}(X_i - Z) = 110$ and $\sum_{i=1}^{n}(X_i - 5)$. Find the value of and the mean.

**Q40**. Find the missing frequencies in the following frequency distribution shown that the mean of the distribution is 1.46.

| No. of accidents | 0 | 1 | 2 | 3 | 4 | 5 | Total |
|---|---|---|---|---|---|---|---|
| Frequency | 46 | ? | ? | 25 | 10 | 5 | 200 |

**Q41.** Prove that the sum of the deviations of individuals observations from the mean is zero.

**Q42.** From the data given below find:

| Wage[Rs] | 150-200 | 200 – 250 | 250 – 300 | 300 – 350 | 350 – 400 | 400 – 450 | 450 – 500 |
|---|---|---|---|---|---|---|---|
| No. of children's | 5 | 3 | 5 | 6 | 8 | 7 | 5 |

(a). Lower limit of the third class (b). Upper limit of the seventh class.
(c). Class boundaries of the sixth class. (d). The class mark of the fifth class.
(e) The size of the second class (f) Draw histogram of the data.

**Q43**. The average score of girls in class examination in a school is 67 and that of boys is 63. The average score for the whole class is 64.5 find %age of girls and boys in the class.

**Q44**. Find the unknown entries (a, b, c, d, e, f, and g) from the following frequency distribution of heights of 50 students in a class.

| Class Intervals (Height in cm) | Frequency | Cumulatle frequency |
|---|---|---|
| 150-155 | 12 | a |
| 155-160 | b | 25 |
| 160-165 | 10 | c |
| 165-170 | d | 43 |
| 170-175 | e | 48 |
| 175-180 | z | r |