



# SHIKSHA CLASSES

Sub. : Maths  
Std. : X<sup>th</sup> - CBSE

Question Paper  
13 : Statistics

Marks : 30  
Time : 1 Hour.

## Section : A (Each 1 Mark)

### Multiple choice Questions (MCQs).

- Q.1 : One of the methods for determining mode is  
a) Mode = 2 Median - 3 Mean      b) Mode = 3 Median - 2 Mean  
c) Mode = 2 Mean - 3 Median      d) Mode = 3 Mean - 2 Median
- Q.2 : Mode is the  
a) middle most frequent value      b) least frequent value  
c) maximum frequent value      d) none of these
- Q.3 : Construction of a cumulative frequency table is useful in determining the  
a) mean      b) median      c) mode      d) none of these
- Q.4 : Which of the following can not be determined graphically?  
a) Mean      b) Median      c) Mode      d) None of these
- Q.5 : The mode and mean is given by 7 and 8, respectively. Then the median is:  
a)  $1/13$       b)  $13/3$       c)  $23/3$       d) 33
- Q.6 : If the mean of first  $n$  natural numbers is  $3n/5$ , then the value of  $n$  is:  
a) 3      b) 4      c) 5      d) 6
- Q.7 : The mean of following distribution is:

$x_i$	11	14	17	20
$f_i$	3	6	8	7

- a) 15.6      b) 17      c) 14.8      d) 16.4
- Q.8 : Consider the following frequency distribution of the heights of 60 students of a class:

Height (in cm)	150 - 155	155 - 160	160 - 165	165 - 170	170 - 175	175 - 180
Number of students	15	13	10	8	9	5

The sum of the lower limit of the modal class and upper limit of the median class is

- a) 310      b) 315      c) 320      d) 330
- Q.9 : While computing mean of grouped data, we assume that the frequencies are

- a) centred at the class marks of the classes
- b) evenly distributed over all the classes
- c) centred at the upper limits of the classes
- d) centred at the lower limits of the classes

**For question number 10 to 11 two statements are given one labeled Assertion and other labeled Reason select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below**

- a) If both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
- b) If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
- c) If Assertion is correct but Reason is incorrect.
- d) If Assertion is incorrect but Reason is correct.

Q.10 : **Assertion:** If the value of mode and mean is 60 and 66 respectively, then the value of median is 64.  
**Reason:** Median = (mode + 2 mean)/2.

Q.11 : **Assertion:** The arithmetic mean of the following given frequency distribution table is 13.81.

<i>x</i>	4	7	10	13	16	19
<i>f</i>	7	10	15	20	25	30

**Reason:**  $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$ .

**Section : B (Each 2 Marks)**

Q.12 : If the value of mean and median are 264 & 272, then find the value of mode.

Q.13 : Calculate the median from

Marks	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
No. of students	5	15	30	8	2

**OR**

The marks distribution of 30 students in mathematics examination are given below :

Marks	10 – 25	25 – 40	40 – 55	55 – 70	70 – 85	85 – 100
No. of students	5	15	30	8	2	6

Find the mode of this data.

**Section : C (Each 3 Marks)**

Q.14 : If the median of the distribution given below is 28.5, find the value of x and y.

class interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	Total
No. of students	5	x	20	15	y	5	60

**OR**

The mean of the following frequency table 50. But the frequencies  $f_1$  and  $f_2$  in class 20-40 and 60-80 are missing. Find the missing frequencies.

Class interval	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100	Total
frequency	17	$f_i$	32	$f_2$	19	120

Q.15 : Following table shows the weights of 12 students.

Weight (in kg)	67	70	72	73	85
No. of students	4	3	2	2	1

Find the mean weight by using shortcut method.

**Section - D(Each 5 Marks)**

Q.16 : From the following data, find mean, median & mode.

Class interval	65 – 85	85 – 105	105 – 125	125 – 145	145 – 165	165 – 185	185 – 205
Frequency	4	5	13	20	14	07	04

**OR**

The following distribution shows the daily pocket allowance of children of a locality. The mean pocket allowance to Rs 18 find the missing f.

Daily pocket money	11 – 13	13 – 15	15 – 17	17 – 19	19 – 21	21 – 23	23 – 25
No. of Children	01	06	09	13	f	5	4

**Section : E**

**Q.17 : Case Study :**

The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China.

During survey, the ages of 80 patients infected by COVID and admitted in the one of the City hospital were recorded and the collected data is represented in the less than cumulative frequency distribution table.



<b>Age(in year)</b>	<b>Below 15</b>	<b>Below 25</b>	<b>Below 35</b>	<b>Below 45</b>	<b>Below 55</b>	<b>Below 65</b>
<b>No. of Patients</b>	6	17	38	61	75	80

Based on the above information, answer the following questions :

- i) Find the modal class interval. 1
- ii) Find the median class interval. 1
- iii) Find the modal age of the patients admitted in the hospital. 2

**OR**

How many patients of the age 45 years and above were admitted?

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