



# MATHS

## BOOKS - ICSE

### STATISTICS AND GRAPH WORK

#### Topic 1 3 Marks Questions

1. Given below are the marks obtained by 30 students in an examination :

08 17 33 41 47 23 20 34 09 18 42 14 30  
19 29 11 36 48 40 24 22 02 16 21 15 32  
47 44 33 01

Taking class intervals 1-10, 11-20 ,,,,,, 41 - 50 , Make a frequency table for the above distribution.



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2. Find the actual lower class limits , upper class limits and mid values of the classes :

10 -19 , 20 - 29 , 30 - 39 , and 40 - 49



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3. Use the table given below to find : (a) The actual class limits of the fourth class. (b) The class

boundaries of the sixth class. (c) The class mark of the third class. (d) The upper and lower limits of the fifth class. (e) The size of the third class.

Class interval	Frequency
30 – 34	7
35 – 39	10
40 – 44	12
45 – 49	13
50 – 54	8
55 – 59	4



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4. Use the table given below to find : (a) The actual class limits of the fourth class. (b) The class boundaries of the sixth class. (c) The class mark of

the third class. (d) The upper and lower limits of the fifth class. (e) The size of the third class.

Class interval	Frequency
30 – 34	7
35 – 39	10
40 – 44	12
45 – 49	13
50 – 54	8
55 – 59	4

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5. Use the table given below to find :

The class marks of the third class.

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6. Use the table given below to find : (a) The actual class limits of the fourth class. (b) The class boundaries of the sixth class. (c) The class mark of the third class. (d) The upper and lower limits of the fifth class. (e) The size of the third class.

Class interval	Frequency
30 – 34	7
35 – 39	10
40 – 44	12
45 – 49	13
50 – 54	8
55 – 59	4



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7. Use the table given below to find : (a) The actual class limits of the fourth class. (b) The class boundaries of the sixth class. (c) The class mark of the third class. (d) The upper and lower limits of the fifth class. (e) The size of the third class.

Class interval	Frequency
30 – 34	7
35 – 39	10
40 – 44	12
45 – 49	13
50 – 54	8
55 – 59	4



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**8.** Construct a cumulative, frequency distribution table from the frequency table given below :

Calss Interval	Frequency
0 – 8	9
8 – 16	13
16 – 24	12
24 – 32	7
32 – 40	15



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**9.** Construct a cumulative frequency distribution table from the frequency table given below :

Calss Interval	Frequency
1 – 10	12
11 – 20	18
21 – 30	23
31 – 40	15
41 – 50	10



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**10.** Construct a frequency distribution table from the following cumulative frequency distribution :

Calss Interval	Cumulative Frequency
10 – 19	8
20 – 29	19
30 – 39	23
40 – 49	30



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**11.** Construct a frequency distribution table from the following cumulative frequency distribution :

Calss Interval	Frequency
5 – 10	18
10 – 15	30
15 – 20	46
20 – 25	73
25 – 30	90



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**12.** The value of  $\pi$  upto 50 decimal places is :

3.1 4159 26 5358 97 9423 84 62 64 33 832 7950 28 84  
19 71 69 3993 7510

Make a frequency distribution table of the digits from 0 to 9 after the decimal place.



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**13.** The value of  $\pi$  upto 50 decimal places is :

3.1 4159 26 5358 97 9423 84 62 64 33 832 7950 28 84  
19 71 69 3993 7510

Which are the most and the least occurring digits ?



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**Topic 1 4 Marks Questions**

1. Construct the frequency distribution table from the following cumulative frequency table :

Ages	No. of Students
Below 4	0
Below 7	85
Below 10	140
Below 13	243
Below 16	300

State the number of students in the age group 10 - 13.

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2. Construct the frequency distribution table from the following cumulative frequency table :

Ages	No. of Students
Below 4	0
Below 7	85
Below 10	140
Below 13	243
Below 16	300

State the age - group which has the least number of students .



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3. Fill in the blanks in the following table:

<b>Class Interval</b>	<b>Frequency</b>	<b>Cumulative Frequency</b>
25 – 34	.....	15
35 – 44	.....	28
45 – 54	21	.....
55 – 64	16	.....
65 – 74	.....	73
75 – 84	12	.....



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4. Draw frequency polygons for each of the following :

## Using histogram

Class Interval	Frequency
10 — 30	4
30 — 50	7
50 — 70	5
70 — 90	9
90 — 110	5
110 — 130	6
130 — 150	4



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5. Draw frequency polygons for each of the following :

Without using histogram.

Class Interval	Frequency
10 — 30	4
30 — 50	7
50 — 70	5
70 — 90	9
90 — 110	5
110 — 130	6
130 — 150	4



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6. Construct a combined histogram and frequency polygon for the following frequency distribution :

Calss Interval	Frequency
10 — 20	3
20 — 30	5
30 — 40	6
40 — 50	4
50 — 60	2



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7. Construct a frequency polygon for the following data.

Calss Interval	Frequency
10 – 14	5
15 – 19	8
20 – 24	12
25 – 29	9
30 – 34	4



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8. Construct a frequency polygon for the following frequency distribution , using a graph sheet .



Marks	No. of Students
40 — 50	7
50 — 60	18
60 — 70	26
70 — 80	37
80 — 90	20
90 — 100	6

Use 2 cm = 10 Marks

2 cm = 5 Students [Specimen paper , 2019]



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9. Construct a frequency polygon for the following distribution . Using a graph sheet.

Marks	No. of Students
30 — 40	6
40 — 50	15
50 — 60	28
60 — 70	34
70 — 80	18
80 — 90	8



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## Topic 2 3 Marks Questions

1. Find the mean of first ten odd natural numbers.



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2. The mean of 5 numbers is 18. If one number is excluded, the mean of remaining numbers becomes 16. Find the excluded number.



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3. If the mean of observations  $x, x + 2, x + 4, x + 6$  and  $x + 8$  is 11, find the value of  $x$



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4. If the mean of observations  $x, x + 2, x + 4, x + 6$  and  $x + 8$  is 11, find the mean of the first three observations.



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5. The mean weight of 120 students of a school is  $52.75$  kg. If the mean weight of 50 of them is 51 kg, find the mean weight of the remaining students.



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6. The following data have been arranged in ascending order. If their median is 63, find the value of  $x$ .

34,37,53,55, $x$ , $x+2$ ,77,83,89 and 100.



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7. Out of 10 students, who appeared in a test, three secured less than 30 marks and 3 secured more than 75 marks. The marks secured by the remaining 4 students are 35, 48, 66 and 40. Find the median score of the whole group.



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8. The mean of 10 numbers is 24. If one more number is included, the new mean is 25. Find the included number.



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9. If the mean of the observation  $a$ ,  $a + 6$ ,  $a + 2$ ,  $a + 8$  and  $a + 4$  is 11. Find the value of  $a$ .



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10. If the mean of the observation  $a$  ,  $a + 6$  ,  $a + 2$  ,  $a + 8$  and  $a + 4$  is 11 . Find .  
the median.



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## Topic 2 4 Marks Questions

1. If different values of variable  $x$  are 9.8, 5.4 , 3.7 , 1.7 , 1.8 , 2.6 , 2.8 , 10.5 and 11.1 , find  
the mean  $\bar{x}$



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2. If different values of variable  $x$  are 9.8, 5.4 , 3.7 , 1.7 , 1.8 , 2.6 , 2.8 , 10.5 and 11.1 , find

the value of  $\sum (x - \bar{x})$



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3. The mean of 15 observations is 32. Find the resulting mean if each observation is :  
increased by 3



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4. The mean of 15 observations is 32. Find the resulting mean if each observation is :  
divided by 0.5



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5. The mean of 15 observations is 32. Find the resulting mean if each observation is :  
decreased by 20%



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6. The mean of 200 items was 50. Later on, it was discovered that two items were misread as 92 and 8 instead of 192 and 88. Find the correct mean.



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7. The mean marks (out of 100) of boys and girls in an examination are 70 and 73 respectively. If the mean marks of all the students in that examination is 71, find the ratio of the number of boys the number of girls.



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**8.** Find the median of :

25,16,26, 16, 32, 31, 19, 28 and 35



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**9.** Find the median of :

233 , 173 , 189 , 208 , 194 , 204 , 194 , 185 ,200 and 220



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**10.** Find the mean of the following data :

30,32,24,34, 26,28, 30, 35, 33, 25

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



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11. Find the mean of the following data :

30,32,24,34, 26,28, 30, 35, 33, 25

Find the median of the given data.



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12. Find the mean and median of all the positive factors of 72.



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**13.** Find the mean proportion between : 3 . 6 and 1 .

6



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**14.** Find Median of the following data :

25, 10,40,88,45,60,77,36,18,95,56,65,7,0,38 and 83



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