CLASS -10 MATHEMATICS ,
STANDARD QUESTIONS.

MultipleChoiceQuestions

1. Let $\overline{x}$ be the mean of $x_1, x_2, \dots ,x_n$ and $\overline{y}$ the mean of $y_1, y_2, \dots , y_n$. If $\overline{z}$ is the mean of $x_1, x_2, \dots ,x_n, y_1, y_2, \dots , y_n$, then $\overline{z}$ is equal to

(a) $\overline{x} + \overline{y}$ (b) $\frac{\overline{x}+\overline{y}}{2}$ (c) $\frac{\overline{x}+\overline{y}}{n}$ (d) $\frac{\overline{x}+\overline{y}}{2n}$

2. For the following distribution :

Class	0-5	5-10	10-15	15-20	20-25
Frequency	10	15	12	20	9

the sum of lower limits of the median class and modal class is

(a) 15   (b) 25   (c) 30   (d) 35

3.The mean of 25 observations is 36. Out of these observations if the mean of first 13 observations is 32 and that of the last 13 observations is 40, the 13th observation is

(a) 23   (b) 36   (c) 38   (d) 40

4.The mean of n observation is $\overline{x}$. If the first item is increased by 1,second by 2 and so on, then the new mean is

(a) $\overline{x} + n$ (b) $\overline{x} + \frac{n}{2}$ (c) $\overline{x} + \frac{n+1}{2}$ (d) None of these

5. For the following distribution :

Marks	Number of students
Below 10	3
Below 20	12
Below 30	27
Below 40	57
Below 50	75
Below 60	80

the modal class is

(a) 10-20   (b) 20-30   (c) 30-40   (d) 50-60

Fill in the blanks.

6.If $\overline{x_1}, \overline{x_2} \overline{x_3} \dots \dots \overline{x_n}$ are the means of n groups with $n_1, n_2, \dots , n_i$ number of observations respectively, then the mean $\overline{x}$ of all the groups taken together is --------.

7.The algebraic sum of the deviations of a frequency distribution from its mean is -------

8. Consider the following distribution :

Marks obtained	Number of students
More than or equal to 0	63
More than or equal to 10	58
More than or equal to 20	55
More than or equal to 30	51
More than or equal to 4 0	48
More than or equal to 50	42

the frequency of the class 30-40 is------------.

Answer the following.

9. The mean of ungrouped data and the mean calculated when the same data is grouped are always the same. Do you agree with this statement? Givereason for your answer.

10. Is it correct to say that an ogive is a graphical representation of a frequency distribution? Give reason.

Short Answer type-I

11. For the following data, find the median class .

Class interval	128-135	135-142	142-149	149-156	156-163	163-170
Frequency	8	5	9	12	5	1

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12. Construct the cumulative frequency distribution of the following distribution :

Class	12.5-17.5	17.5-22.5	22.5-27.5	27.5-32.5	32.5-37.5
Frequency	2	22	19	14	13

13. The following table shows the cumulative frequency distribution of marks of 800 students in an examination:

Marks	Number of students
Below 10	10
Below 20	50
Below 30	130
Below 40	270
Below 50	440
Below 60	570
Below 70	670
Below 80	740
Below 90	780
Below 100	800

Construct a frequency distribution table for the data above.

Short answer Type-II

14. The following are the ages of 300 CORONA patients getting medical treatment in a hospital on a particular day :

Age (in years)	10-20	20-30	30-40	40-50	50-60	60-70
Number of patients	60	42	55	70	53	20

Form:
(i) Less than type cumulative frequency distribution.
(ii) More than type cumulative frequency distribution.

15.The following is the cumulative frequency distribution (of less than type) of 1000 persons each of age 20 years and above. Determine the mean age.

Age below (in years)	30	40	50	60	70	80
Number of persons	100	220	350	750	950	1000

16. The mean of the following distribution is 18. The frequency f in the class interval 19-21 is missing. Determine f.

Class interval	11-13	13-15	15-17	17-19	19-21	21-23	23-25
Frequency	3	6	9	13	f	5	4

17. The median of the distribution given below is 14.4.

Class interval	0-6	6-12	12-18	18-24	24-30
Frequency	4	x	5	y	1

 Find the values of *x* and *y*, if the total frequency is 20.

18. Size of agricultural holdings in a survey of 200 families is given in the following table:

Size of agricultural Number of families holdings (in ha)	Number of families
0-5	10
5-10	15
10-15	30
15-20	80
20-25	40
25-30	20
30-35	5

Compute median and mode size of the holdings.

Long Answer Type Questions:

19.The distribution of heights (in cm) of 96 children is given below;

Height (in cm)	Number of children
124-128	5
128-132	8
132-136	17
136-140	24
140-144	16
144-148	12
148-152	6
152-156	4
156-160	3
160-164	1

Draw a less than type cumulative frequency curve for this data and use it to compute median height of the children.

20. The annual rainfall record of a city for 66 days is given in the following table.

Rainfall (in cm)	0-10	10-20	20-30	30-40	40-50	50-60
Number of days	22	10	8	15	5	6

Calculate the median rainfall using ogives (of more than type and of less than type)