MATHS

BOOKS - OSWAL PUBLICATION

STATISTICS

Stand Alone Mcqs

1. In the formula $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$ for finding the mean of grouped data d_i'S and deviation from a of

A. lower limits of the classes

B. upper limits of the classes

C. mid-points of the classes

D. frequencies of the class marks

Answer: C

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2. While computing mean of grouped data, we assume that the frequecies are

A. evenly distributed over all the classes

B. centred at the class marks of the classes

C. centred at the upper limits of the classes

D. centred at the lower limits of the classes

Answer: B

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3. If $x_i's$ are the mid-points of the class intervals of grouped data, $f_i's$ are the

corresponding frequencies and $\bar{x}$ is the mean, then $\sum (f_i x_i - \bar{x})$ equal to

A. 0

B. -1

C. 1

D. 2

Answer: A

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4. In the formula $\bar{x} = a + h\frac{\sum f_i u_i}{\sum f_i}$ for finding the mean of grouped frequency distribution u_i is equal to

A. $\frac{x_i + a}{h}$

B. $h(x_i - a)$

C. $\frac{x_i - a}{h}$

D. $\frac{a - x_i}{h}$

Answer: C

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5. The abscissa of the point of intersection of the Less Than Type and of the More Than Type cumulative frequency curves of a grouped data gives its

A. mean

B. median

C. mode

D. All of these

Answer: B

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6. 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 median class and modal class is

A. 15

B. 25

C. 30

D. 35

Answer: B

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7. Consider the following frequency distribution:

Class	0–5	6–11	12–17	18–23	24–29
Frequency	13	10	15	8	11

the upper limit of the median class is

A. 7

B. 17.5

C. 18

D. 18.5

Answer: B

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8. Consider the data

Class	65–85	85–105	105–125	125–145	145–165	165–185	185–205
Frequency	4	5	13	20	14	7	4

The difference of the upper limit of the

median class and the lower limit of the modal class is

A. 0

B. 19

C. 20

D. 38

Answer: C

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9. 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

Answer: C

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10. The times, in seconds, taken by 150 athletes to run a 110 m hurdle race is tabulated below:

Class	13.8–14	14–14.2	14.2–14.4	14.4–14.6	14.6–14.8	14.8–15
Frequency	2	4	5	71	48	20

The number of athletes who completed the race in less than 14.6 seconds is

A. 11

B. 71

C. 82

D. 130

Answer: C

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11. 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 40	48
More than or equal to 50	42

The frequency of the class 30-40 is

A. 3

B. 4

C. 48

D. 51

Answer: A

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Assertion And Reason Based Mcqs

1. In the following question, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as.

Assertion (A): If the median and mode of a frequency distribution are 150 and 154 respectively. Then its mean is 148.

Reason (R): Mean, median and mode of a frequency distribution are related as 3Mean=3Median - Mode.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true and R is not correct explanation for A.

C. A is true but R is false.

D. A is false but R is true.

Answer: A

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2. In the following question, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as.

Assertion (A): The mean of terms x,y and z is y, then x+z=3y.

Reason (R): Mean = $\frac{\text{sum of observations}}{\text{Number of observations}}$

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true and R is not correct explanation for A.

C. A is true but R is false.

D. A is false but R is true.

Answer: D

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3. In the following question, A statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as.

Assertion (A): Mean of given data is 13.81

X	4	7	10	13	16	19
F	7	10	15	20	25	30

Reason (R): Mean= $\frac{\sum FX}{\sum F}$

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true and R is not correct explanation for A.

C. A is true but R is false.

D. A is false but R is true.

Answer: A

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4. If the number of runs scored by 11 players of a cricket team of India are 5, 19, 42, 11, 50, 30, 0, 52, 36, 27, 21 then median is

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Case Based Mcqs

1. 100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the English alphabets in the surnames was obtained as follows:

Number of letter	Number of surnames
1-4	6
4-7	30
7-10	40
10-13	16
13-16	4
16-19	4

What is the upper limit of median class?

A. 10

B. 13

C. 16

D. 19

Answer: A

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2. Read the following text and answer the following question on the basis of the same.

100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the English alphabets in the surnames was

obtained as follows:

Number of letter	Number of surnames
1-4	6
4-7	30
7-10	40
10-13	16
13-16	4
16-19	4

Determine the median number of letters in the surnames.

A. 8.05

B. 8

C. 7.88

D. 8.32

Answer: A

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3. 100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the English alphabets in the

surnames was obtained as follows:

Number of letter	Number of surnames
1-4	6
4-7	30
7-10	40
10-13	16
13-16	4
16-19	4

What is the upper limit of modal class?

A. 13

B. 19

C. 10

D. 16

Answer: C

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4. 100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the English alphabets in the surnames was obtained as follows:

Number of letter	Number of surnames
1-4	6
4-7	30
7-10	40
10-13	16
13-16	4
16-19	4

Sum of lower limit of median and modal class is:

A. 10

B. 12

C. 20

D. 14

Answer: D

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5. Read the following text and answer the following question on the basis of the same.

100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the

English alphabets in the surnames was obtained as follows:

Number of letter	Number of surnames
1-4	6
4-7	30
7-10	40
10-13	16
13-16	4
16-19	4

Cumulative frequency of modian class:

A. 36

B. 76

C. 92

D. 96

Answer: C

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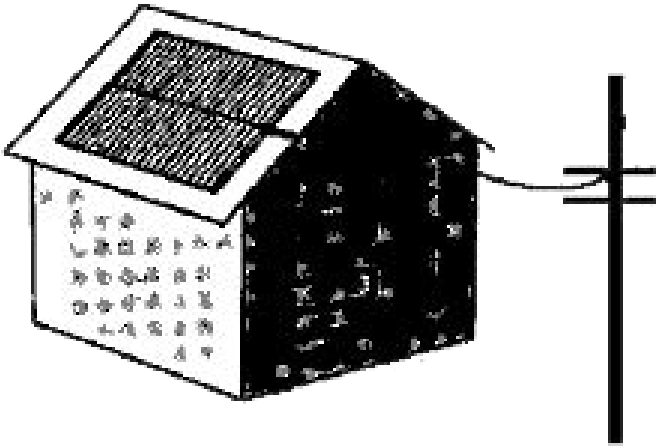
6. Electricity Consumption problem



The following frequency distribution gives the monthly consumption of consumers of a locality.

Monthly consumption (in units)	Number of consumers
65-85	4
85-105	5
105-125	13
125-145	20
145-165	14
165-185	8
185-205	4

What is the lower limit of median class?

A. 125

B. 145

C. 165

D. 185

Answer: A

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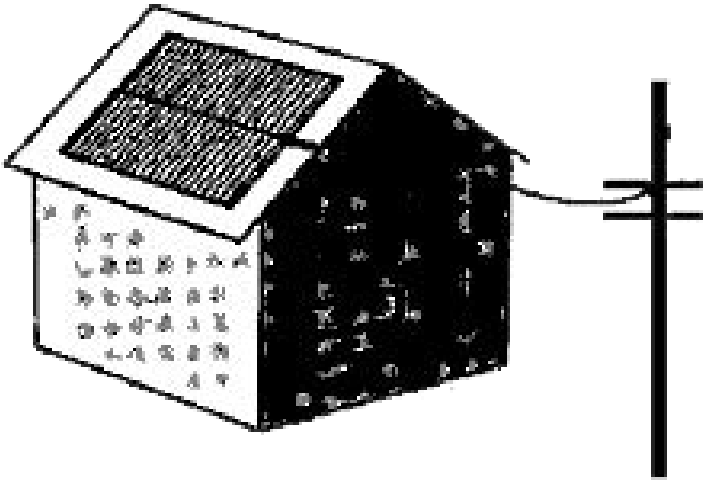
7. Electricity Consumption problem



The following frequency distribution gives the monthly consumption of consumers of a locality.

Monthly consumption (in units)	Number of consumers
65-85	4
85-105	5
105-125	13
125-145	20
145-165	14
165-185	8
185-205	4

What is the lower limit of modal class?

A. 125

B. 145

C. 165

D. 185

Answer: A

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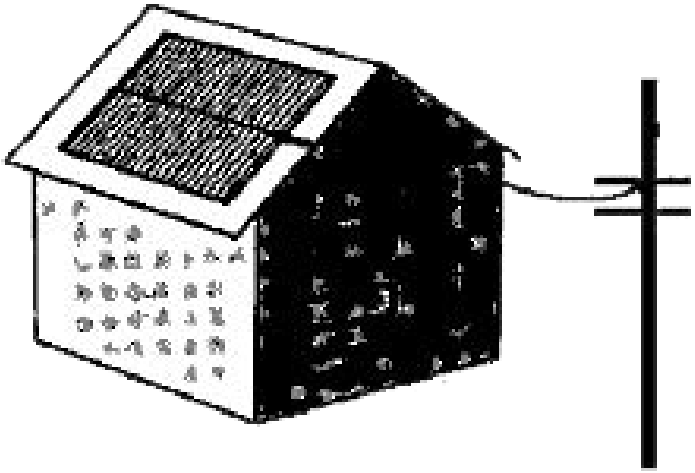
8. Electricity Consumption problem



The following frequency distribution gives the monthly consumption of consumers of a locality.

Monthly consumption (in units)	Number of consumers
65-85	4
85-105	5
105-125	13
125-145	20
145-165	14
165-185	8
185-205	4

What is the mean of upper limits of median and modal class?

A. 125

B. 145

C. 165

D. 185

Answer: B

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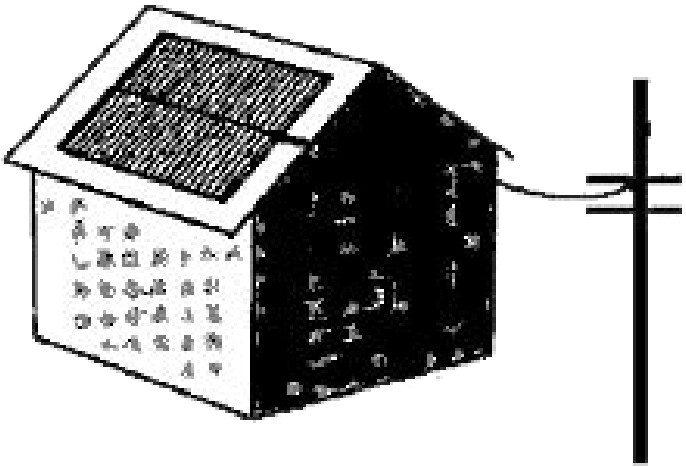
9. Electricity Consumption problem



The following frequency distribution gives the monthly consumption of consumers of a

locality.

Monthly consumption (in units)	Number of consumers
65-85	4
85-105	5
105-125	13
125-145	20
145-165	14
165-185	8
185-205	4

What is the width of the class?

A. 10

B. 15

C. 20

D. 25

Answer: C

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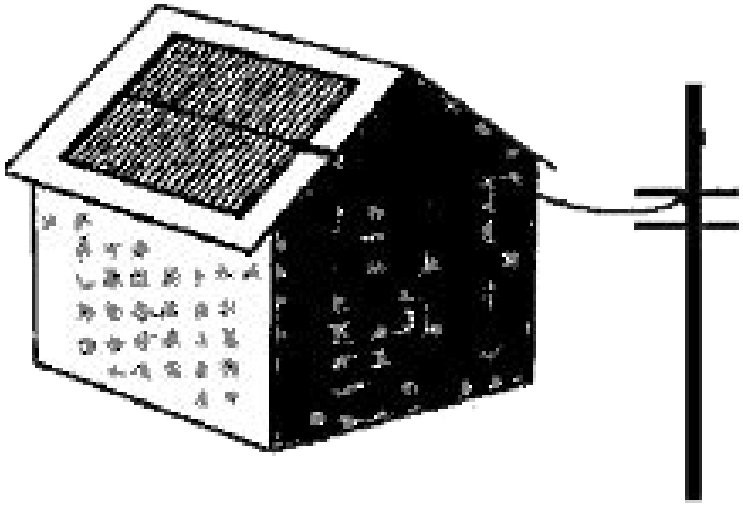
10. Read the following text and answer the following question on the basis of the same.

Electricity Consumption problem



The following frequency distribution gives the monthly consumption of consumers of a locality.

Monthly consumption (in units)	Number of consumers
65-85	4
85-105	5
105-125	13
125-145	20
145-165	14
165-185	8
185-205	4

The median is:

A. 137

B. 135

C. 125

D. 135.7

Answer: A

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11. COVID-19 Pandemic

The COVID-19 pandemic, also known as coronavirus pandemic, is an ongoing pandemic of coronavirus disease caused by the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) among

humans.

The following tables shows the age distribution of case admitted during a day in two different hospitals .

Table 1

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	6	11	21	23	14	5

Table 2

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	8	16	10	42	24	12

Refer to table 1.

The average age for which maximum cases occurred is

A. 32.24

B. 34.36

C. 36.84

D. 42.24

Answer: C

12. COVID-19 Pandemic

The COVID-19 pandemic, also known as coronavirus pandemic, is an ongoing

pandemic of coronavirus disease caused by the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) among humans.

The following tables shows the age distribution of case admitted during a day in two different hospitals .

Table 1

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	6	11	21	23	14	5

Table 2

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	8	16	10	42	24	12

Refer to table 1.

The upper limit of modal class is

A. 15

B. 25

C. 35

D. 45

Answer: D

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13. COVID-19 Pandemic

The COVID-19 pandemic, also known as coronavirus pandemic, is an ongoing pandemic of coronavirus disease caused by the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) among humans.

The following tables shows the age distribution of case admitted during a day in

two different hospitals .

Table 1

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	6	11	21	23	14	5

Table 2

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	8	16	10	42	24	12

Refer to table 1.

The mean of the given data is

A. 26.2

B. 32.24

C. 33.5

D. 35.4

Answer: D

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14. COVID-19 Pandemic

The COVID-19 pandemic, also known as coronavirus pandemic, is an ongoing pandemic of coronavirus disease caused by the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) among humans.

The following tables shows the age distribution of case admitted during a day in two different hospitals .

Table 1

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	6	11	21	23	14	5

Table 2

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	8	16	10	42	24	12

Refer to table 2.

The mode of the given data is

A. 41.4

B. 48.2

C. 55.3

D. 64.6

Answer: A

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15. COVID-19 Pandemic

The COVID-19 pandemic, also known as coronavirus pandemic, is an ongoing pandemic of coronavirus disease caused by the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) among humans.

The following tables shows the age distribution of case admitted during a day in two different hospitals .

Table 1

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	6	11	21	23	14	5

Table 2

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
No. of cases	8	16	10	42	24	12

Refer to table 2.

The median of the given data is

A. 32.7

B. 40.2

C. 42.3

D. 48.6

Answer: B

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Example

1. Find the mean of the following distribution using step-deviation method.

Class interval	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
Frequency	25	40	42	33	10

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2. The median of the following data is 525. Find the values of x and y, if the total frequency is 100.

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3. The table below shows the daily expenditure on food of 25 households in a locality. Find the

mean daily expenditure on food by a suitable method.

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Self Assessment Multiple Choice Question

1. Consider the following frequency distribution of the height of 60 students of a class:

The upper limit of the median class in the

given data is:

Height (in cm)	150–155	155–160	160–165	165–170	170–175	175–180
No. of students	15	13	10	8	9	5

A. 165

B. 155

C. 160

D. 170

Answer: A::B::C::D

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2. 1 4. If the median of the series exceeds the mean by 3, find by what number the mode exceeds its mean.

A. 3

B. 9

C. 2

D. 6

Answer: B

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Self Assessment Fill In The Blanks

1. In the following distribution, the median class is _____.

Cost of living index	1400–1550	1550–1700	1700–1850	1850–2000
No. of week	8	15	21	8

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2. According to empirical relation between mean, median and mode:

Mode + _____ Mean = _____ Median

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3. Consider the following distribution:

Marks obtained	More than or equal to 5	More than or equal to 10	More than or equal to 15	More than or equal to 20
No. of students (Cumulative frequency)	30	23	8	2

The frequency of the class 10 -15 is _____.

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Self Assessment Very Short Answer Type Questions

1. Find the sum of the lower limit of the median class and the upper limit of the modal class.

Class	10–20	20–30	30–40	40–50	50– 60	60–70
Fre-quency	1	3	5	9	7	3

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2. Find the median of the data, using an empirical relation when it is given that Mode = 12.4 and Mean = 10.5.

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3. Following distribution gives cumulative frequencies of 'more than type':

Change the above data to a continuous grouped frequency distribution.

Marks obtained	More than or equal to 5	More than or equal to 10	More than or equal to 15	More than or equal to 20
Number of students (cumulative frequency)	30	23	8	2

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Self Assessment Short Answer Type Questions I

1. Find the mode of the data using an empirical formula when it is given that mean is 30 and median is 25.

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2. Find the arithmetic mean of the following frequency distribution:

x_i	3	4	5	7	10
f_i	3	4	8	5	10

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3. Calculate the median from the following data :

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of Students	5	15	30	8	2

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Self Assessment Short Answer Type Questions Ii

1. Find the mode of the following frequency distribution.

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
Frequency	8	10	10	16	12	6	7

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2. The arithmetic mean of the following frequency distribution is 53. Find the value of k.

Class	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
Frequency	12	15	32	k	13

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3. The table below show the salaries of 280 persons:

Calculate the median salary of the data.

Salary (in thousand ₹)	No. of persons
5 – 10	49
10 – 15	133
15 – 20	63
20 – 25	15
25 – 30	6
30 – 35	7
35 – 40	4
40 – 45	2
45 – 50	1

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Self Assessment Long Answer Type Questions I

1. If the median of the following frequency distribution is 32.5 . Find the value of p :

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	3	5	9	12	p	3	2

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2. If the mean of the following data is 14.7, find the values of p and q.

Class	Frequency
0 – 6	10
6 – 12	p
12 – 18	4
18 – 24	7
24 – 30	q
30 – 36	4
36 – 42	1
Total	**40**

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3. Monthly expenditures on milk in 100 families of a housing society are given in the following frequency distribution:

Find the mode and median for this distribution.

Monthly expenditure (in ₹)	Number of families
0 – 175	10
175 – 350	14
350 – 525	15
525 – 700	21
700 – 875	28
875 – 1050	7
1050 – 1225	5

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Self Assessment Case Study Based Questions

1. The marks obtained by 30 students of class X of a certain school in a mathematics paper consisting of 100 marks are presented in table below.

Marks obtained (x_i)	Number of Student (f_i)
10	1
20	1
36	3
40	4
50	3
56	2
60	4
70	4
72	1
80	1
88	2
92	3
95	1

How many students get 60 marks?

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2. The marks obtained by 30 students of class X of a certain school in a mathematics paper consisting of 100 marks are presented in table below.

Marks obtained (x_i)	Number of Student (f_i)
10	1
20	1
36	3
40	4
50	3
56	2
60	4
70	4
72	1
80	1
88	2
92	3
95	1

How many students get 92 marks?

A. 1

B. 2

C. 3

D. 4

Answer:

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3. The marks obtained by 30 students of class X of a certain school in a mathematics paper consisting of 100 marks are presented in table below.

Marks obtained (x_i)	Number of Student (f_i)
10	1
20	1
36	3
40	4
50	3
56	2
60	4
70	4
72	1
80	1
88	2
92	3
95	1

How many students get mare than 88 marks?

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4. The marks obtained by 30 students of class X of a certain school in a mathematics paper consisting of 100 marks are presented in table below.

Marks obtained (x_i)	Number of Student (f_i)
10	1
20	1
36	3
40	4
50	3
56	2
60	4
70	4
72	1
80	1
88	2
92	3
95	1

How many students get less than 40 marks?

A. 2

B. 3

C. 4

D. 5

Answer:

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5. The marks obtained by 30 students of class X of a certain school in a mathematics paper consisting of 100 marks are presented in table

below.

Marks obtained (x_i)	Number of Student (f_i)
10	1
20	1
36	3
40	4
50	3
56	2
60	4
70	4
72	1
80	1
88	2
92	3
95	1

How many students get more than 60 and less than 92 marks?

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6. The distribution below show the number of wickets taken by bowlers in one-day cricket matches.

Number of wickets	Number of bowlers
20 – 60	7
60 – 100	5
100 – 150	16
150 – 250	12
250 – 350	2
350 – 450	3

How many bowlers take 100 -150 wickets?

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7. The distribution below show the number of wickets taken by bowlers in one-day cricket matches.

Number of wickets	Number of bowlers
20 – 60	7
60 – 100	5
100 – 150	16
150 – 250	12
250 – 350	2
350 – 450	3

How many bowlers take 350 - 450 wickets ?

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8. The distribution below show the number of wickets taken by bowlers in one-day cricket matches.

Number of wickets	Number of bowlers
20 – 60	7
60 – 100	5
100 – 150	16
150 – 250	12
250 – 350	2
350 – 450	3

How many bowlers take more than or equal to 150 wickets ?

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9. The distribution below show the number of wickets taken by bowlers in one-day cricket matches.

Number of wickets	Number of bowlers
20 – 60	7
60 – 100	5
100 – 150	16
150 – 250	12
250 – 350	2
350 – 450	3

How many bowlers take less than 150 wickets?

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10. The distribution below show the number of wickets taken by bowlers in one-day cricket matches.

Number of wickets	Number of bowlers
20 – 60	7
60 – 100	5
100 – 150	16
150 – 250	12
250 – 350	2
350 – 450	3

How many bowlers take more than or equal to 20 and less than 350 wickets?

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Ncert Corner Exercise 14 1

1. A survey was conducted by a group of students as a part of their environment awareness programme, in which they collected the following data regarding the number of plants in 20 houses in a locality. Find the mean number of plants per house. Whi

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2. Consider the following distribution of daily wages of 50 workers of a factory. Find the mean daily wages of the workers of the factor}- by using an appropriate method.

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3. The following distribution shows the daily pocket allowance of children of a locality. The mean pocket allowance is Rs 18. Find the missing frequency f.

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4. Thirty women were examined in a hospital by a doctor and the number of heat beats per minute were recorded and summarised as follows:

Number of heart beats per minute	65–68	68–71	71–74	74–77	77–80	80–83	83–86
Number of women	2	4	3	8	7	4	2

Find number of women have heart bean lessthan 80 and more than 71

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5. In a retail market, fruit vendors were selling mangoes kept in packing boxes. These boxes contained varying number of mangoes. The following was the distribution of mangoes according to the number of boxes. Find the mean number of mangoes kept i

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6. The table below shows the daily expenditure on food of 25 households in a locality. Find the

mean daily expenditure on food by a suitable method.

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7. To find out the concentration of SO_2 in the air (in parts per million, i.e., ppm), the data was collected for 30 localities in a certain city and is presented below:Find the mean concentration of SO_2 in the air.

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8. A class teacher has the following absentee record of 40 students of a class for the whole term. Find the mean number of days a student was absent.

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9. The following table gives the literacy rate (in percentage) of 35 cities. Find the mean literacy rate.

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Ncert Corner Exercise 14 2

1. The following table shows the ages of the patients admitted in a hospital during a year: Find the mode and the mean of the data given above. Compare and interpret the two measures of central tendency.

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2. The following data gives the information on the observed lifetimes (in hours) of 225

electrical components: Determine the modal lifetimes of the components.

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3. The following data gives the distribution of total monthly household expenditure of 200 families of a village. Find the modal monthly expenditure of the families. Also, find the mean monthly expenditure:

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4. The following distribution gives the state-wise teacher-student ratio in higher secondary schools of India. Find the mode and mean of this data. Interprent the two measures.

Number of students per teacher	Number of states/U.T.
15–20	3
20–25	8
25–30	9
30–35	10
35–40	3
40–45	0
45–50	0
50–55	2

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5. The given distribution shows the number of runs scored by some top batsmen of the world in one-day international cricket matches. Find the mode of the data.

Watch Video Solution

6. A student noted the number of cars passing through a spot on a road for 100 periods each of 3 minutes and summarised it in the table given below. Find the mode of the data :

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Ncert Corner Exercise 14 3

1. The following frequency distribution gives the monthly consumption of electricity of 68 consumers of a locality. Find the median, mean and mode of the data and compare them.

Monthly consumption (in units)	Number of consumers
65–85	4
85–105	5
105–125	13
125–145	20
145–165	14
165–185	8
185–205	4

Watch Video Solution

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

Watch Video Solution

3. A life insurance agent found the following data for distribution of ages of 100 policy holders. Calculate the median age, if policies

are given only to persons having age 18 years onwards but less than 60 year.

Watch Video Solution

4. The lengths of 40 leaves of a plant are measured correct to the nearest millimetre, and the data obtained is represented in the following table : Find the median length of the leaves. (Hint: The data needs to be converted to continuous classes for

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5. The following table gives the distribution of the life time of 400 neon lamps Find the median life of a lamp.

Watch Video Solution

6. 100 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in the English alphabets in the surnames was obtained as follows:Determine

the median number of letters in the surnames. Find the mean number of letters in the surnames? Also, find the modal size of the surnames.

Number of letters	1 - 4	4 - 7	7 - 10	10 - 13	13 - 16	16 - 19
Number of surnames	6	30	40	16	4	4

Watch Video Solution

7. The distribution below gives the weights of 30 students of a class. Find the median weight of the students.

Watch Video Solution

Ncert Corner Exercise 14 4

1. about to only mathematics

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2. During the medical check-up of 35 students of a class, their weights were recorded as follows: Draw a less than type ogive for the given data. Hence obtain the median weight

from the graph and verify the result by using the formula.

Watch Video Solution

3. The following table gives production yield per hectare of wheat of 100 farms of a village. Change the distribution to a more than type distribution, and draw its ogive.

Watch Video Solution

Ncert Exemplar Exercise 14 1

1. Choose the correct answer from the given four options:

In the formula $x = a + \frac{\sum x_1 d_i}{\sum f_i}$ for finding the mean of grouped data d_i 's are the deviations from a of

A. lower limits of the classes

B. upper limits of the classes

C. mid-points of the classes

D. frequencies of the class marks

Answer: C

 Watch Video Solution

2. While computing mean of grouped data, we assume that the frequecies are

A. evenly distributed over all the classes

B. centred at the class marks of the classes

C. centred at the upper limits of the classes

D. centred at the lower limits of the classes

Answer: B

Watch Video Solution

3. If x_i's are the mid-points of the class intervals of grouped data $f_i's$ are the corresponding frequencies and x is the mea, then $\sum (f_i x_i - x)$ is equal to

A. 0

B. -1

C. 1

D. 2

Answer: A

Watch Video Solution

4. In the formula $\bar{x} = a + h\frac{\sum f_i u_i}{\sum f_i}$ for finding the mean of grouped frequency distribution u_i is equal to

A. $\frac{x_i + a}{h}$

B. $h(x_i - a)$

C. $\frac{x_i - a}{h}$

D. $\frac{a - x_i}{h}$

Answer: C

Watch Video Solution

5. The abscissa of the point of intersection of the less that type of the more than type cumulative frequency curves of a grouped data gives its

A. mean

B. median

C. mode

D. all of these

Answer: B

Watch Video Solution

6. 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

Answer: B

 Watch Video Solution

7. Consider the following frequency distribution

Class	0-5	6-11	12-17	18-23	24-29
Frequency	13	10	15	8	11

The upper limit of the median class in

A. 17

B. 17.5

C. 18

D. 18.5

Answer: B

Watch Video Solution

8. Choose the correct answer from the given four options:

For the following distribution:

the modal class is:

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

A. $10 - 20$

B. $20 - 30$

C. $30 - 40$

D. $50 - 60$

Answer: C

Watch Video Solution

9. Consider the data

Class	65-85	85-105	105-125	125-145	145-165	165-185	185-205
Frequency	4	5	13	20	14	7	4

The difference between the upper limit of the

median class and the lower limit of the modal class is

A. 0

B. 19

C. 20

D. 38

Answer: C

 Watch Video Solution

10. The times(in second) taken by 150 atheletes to run a 110 m hurdle race are tabulated below

Class	13.8-14	14-14.2	14.2-14.4	14.4-14.6	14.6-14.8	14.8-15
Frequency	2	4	5	71	48	20

The number of atheletes who completed the race in less than 14.6s is

A. 11

B. 71

C. 82

D. 130

Answer: C

Watch Video Solution

11. Choose the correct answer from the given four options:

Consider the following distribution:

The frequency of the class 30-40 is:

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 40	48
More than or equal to 50	42

A. 3

B. 4

C. 48

D. 51

Answer: A

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Ncert Exemplar Exercise 13 2

1. The medium of an ungrouped data and the median calculated when there same data is grouped are always the same. Do you think that this is a correct statement? Give reason.

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2. In Calculating the mean of grouped data, grouped in classes of equal width, we may use the formula

$$\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$$

Where, a is the assumed mean, a must be one of the mid point of the classes. Is the last statement correct? Justify your answer.

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3. Is it trun to say that the mean, mode and median of group data will always be differnet? Justify your answer.

Watch Video Solution

4. Will the median class and modal class of grouped data always be different? Justify your answer.

Watch Video Solution

Ncert Exemplar Exercise 13 3

1. Find the mean of the distribution:

Class	1 – 3	3 – 5	5 – 7	7 – 10
Frequency	9	22	27	17

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2. Calculate the mean of the scores of 20 students in a mathematics test

Marks	10-20	20-30	30-40	40-50	50-60
Number of students	2	4	7	6	1

Watch Video Solution

3. Calculate the mean of the following data:

Class	4–7	8–11	12–15	16–19
Frequency	5	4	9	10

Watch Video Solution

4. The following table gives the number of pages written by Saria for completing her own book for 30 days.

Number of pages written per day	16-18	19-21	22-24	25-27	28-30
Number of days	1	3	4	9	13

Find the mean number of pages written per day.

Watch Video Solution

5. The daily income of a sample of 50 employees are tabulated as follows.

Income (in ₹)	1-200	201-400	401-600	601-800
Number of employees	14	15	14	7

Find the mean daily income of employees.

Watch Video Solution

6. An aircraft has 120 passsenger seats. The number of seats occupied during 100 flights is given in the following table.

Number of seats	100-104	104-108	108-112	112-116	116-120
Frequency	15	20	32	18	15

Determine the mean number of seats occupied over the flights.

Watch Video Solution

7. The weights (in kg) of 50 wrestlers are recorded in the following table.

Weight (in kg)	100-110	110-120	120-130	130-140	140-150
Number of wrestlers	4	14	21	8	3

Find the mean weight of the wrestlers.

Watch Video Solution

8. The mileage (km per litre) of 50 cars of the same model was tested by a manufacture and details are tabulated as given below

Mileage (kmL^{-1})	10-12	12-14	14-16	16-18
Number of cars	7	12	18	13

Find the mean mileage. The manufacture claimed that the mileage of the model was 16 kmL. Do you agree with this claim?

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9. The following is the distribution of weights (in kg) of 40 persons.

Weight (in kg)	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80
Number of persons	4	4	13	5	6	5	2	1

Construct a cumulative frequency distribution (of the less than type) table for the data above.

Watch Video Solution

10. The following table show tha 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.

Watch Video Solution

11. Form the frequency distribution table from the following data:

Construct the frequency distribution table for the above data.

Marks (out of 90)	Number of students (*c.f.*)
More than or equal to 80	4
More than or equal to 70	6
More than or equal to 60	11
More than or equal to 50	17
More than or equal to 40	23
More than or equal to 30	27
More than or equal to 20	30
More than or equal to 10	32
More than or equal to 0	34

Watch Video Solution

12. Find the unknown entries a, b, c, d, e and f in the following distribution of heights of

students in a class.

Height (in cm)	Frequency	Cumulative frequency
150–155	12	a
155–160	b	25
160–165	10	c
165–170	d	43
170–175	e	48
175–180	2	f
Total	50	

Watch Video Solution

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

Form

less than type cumulative frequency distribution.

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

Watch Video Solution

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

Form

more than type cumulative frequency distribution.

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

Watch Video Solution

15. Given below is a cumulative frequency distribution showing the mars secured by 50 students of a class

Marks	Below 20	Below 40	Below 60	Below 80	Below 100
Number of students	17	22	29	37	50

From the frequency distribution table for the data.

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16. Weekly income of 600 families is tabulted below.

Weekly income (in ₹)	Number of families
0-1000	250
1000-2000	190
2000-3000	100
3000-4000	40
4000-5000	15
5000-6000	5
Total	600

Compute the median income.

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17. The maximum bowling speeds, in km per hour, of 33 players at a cricket coaching centre are given as follows.

Speed (in km/h)	85-100	100-115	115-130	130-145
Number of players	11	9	8	5

Calculate the median bowling speed.

Watch Video Solution

18. The monthly income of 100 families are given as below

Income (in ₹)	Number of families
0-5000	8
5000-10000	26
10000-15000	41
15000-20000	16
20000-25000	3
25000-30000	3
30000-35000	2
35000-40000	1

Calculate the modal income.

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19. The weights of coffee im 70 packets are shown in the following table

Weight (in g)	**Number of packets**
200-201	12
201-202	26
202-203	20
203-204	9
204-205	2
205-206	1

Determine the modal weight.

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Ncert Exemplar Exercise 13 4

1. Find the mean of the students for the following distribution:

Marks	Number of students	Marks	Number of students
0 and above	80	60 and above	28
10 and above	77	70 and above	16
20 and above	72	80 and above	10
30 and above	65	90 and above	8
40 and above	55	100 and above	0
50 and above	43		

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2. Determine the mean of the following distribution:

Marks	Number of students
Below 10	5
Below 20	9
Below 30	17
Below 40	29
Below 50	45
Below 60	60
Below 70	70
Below 80	78
Below 90	83
Below 100	85

Watch Video Solution

3. Find the mean age of 100 resisdents of a town from the following data.

Age equal and above (in years)	0	10	20	30	40	50	60	70
Number of persons	100	90	75	50	25	15	5	0

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4. The weight of tea in 70 packets are shown in the following table

Weight (in g)	**Number of packets**
200-201	13
201-202	27
202-203	18
203-204	10
204-205	1
205-206	1

Find the mean weight of packets.

Watch Video Solution

5. The weight of tea in 70 packets are shown in the following table

Weight (in g)	**Number of packets**
200-201	13
201-202	27
202-203	18
203-204	10
204-205	1
205-206	1

Find the mean weight of packets.

Watch Video Solution

6. The weighs of tea in 70 packets are shown in the following table:

Draw the less than type and more than type ogives for the data and use them to find the median weight.

Weight (in gram)	Number of packets
200–201	13
201–202	27
202–203	18
203–204	10
204–205	1
205–206	1

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7. The table below shows the salaries of 280 persons.

Calculate the median and mode of the data.

Salary (In thousands (₹))	Number of persons
5–10	49
10–15	133
15–20	63
20–25	15
25–30	6
30–35	7
35–40	4
40–45	2
45–50	1

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8. The mean of the following distribution is 50 but the frequency f_1 and f_2 in classes 20-40 and 60-80, resepectively are not known. Find these frequencies, if the sum of all the fequencies is 120

Class	0-20	20-40	40-60	60-80	80-100
Frequency	17	f_1	32	f_2	19

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9. The median of the following data is 50. Find the values of p and q, if the sum of the all the

frequencies is 90.

Marks	Frequency
20-30	p
30-40	15
40-50	25
50-60	20
60-70	q
70-80	8
80-90	10

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10. The distribution of heights (in cm) of 96 children is given below:

Draw a less than type cumulative frequency

curve for this data and use it to compute median height of the children.

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

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

Compute median and mode size of the holdings.

Size of agricultural 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	05

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12. 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)

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13. The following is the frequency distribution of duration for 100 calls made on a mobile phone:

Calculate the average duration (in sec) of a call and also find the median from a cumulative frequency curves.

Duration (in seconds)	Number of calls
95–125	14
125–155	22
155–185	28
185–215	21
215–245	15

Watch Video Solution

14. 50 students enter for a school javeloin throw competition. The distance (in metre) thrown are recorded below

Distance (in m)	0-20	20-40	40-60	60-80	80-100
Number of students	6	11	17	12	4

(i) Construct a cumulative frequency table.

(ii) Draw a cumulative frequency curve (less than type)and calculated median distance drawn by using the curve.

(iii) Calculate the median distance by using the formula for median.

(iv) Are the median distance calculated in (ii) and (iii) same?

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Board Corner Short Answer Type Questions

1. Find the mode of the following frequency distribution.

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
Frequency	8	10	10	16	12	6	7

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2. The arithmetic mean of the following frequency distribution is 53. Find the value of

k.

Class	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
Frequency	12	15	32	k	13

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3. Find the mode of the following distribution:

Classes Interval	25 – 30	30 – 35	35 – 40	40 – 45	45 – 50	50 – 55
Frequency	25	34	50	42	38	14

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4. The marks obtained by 110 students in an examination are given below:

Find the mean marks of the studens.

Marks	30 – 35	35 – 40	40 – 45	45 – 50	50 – 55	55 – 60	60 – 65
Number of Students	14	16	28	23	18	8	3

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5. about to only mathematics

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Board Corner Long Answer Type Questions

1. If the median of the following frequency distribution is 32.5 . Find the value of p :

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	3	5	9	12	p	3	2

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2. The marks obtained by 100 students of class is an examination are given below:

Marks	No. of students
0 – 5	2
5 – 10	5
10 – 15	6
15 – 20	8
20 – 25	10
25 – 30	25
30 – 35	20
35 – 40	18
40 – 45	4
45 – 50	2

Draw 'a less than' type cumulative frequency curves (ogive). Hence, find median.

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3. about to only mathematics

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4. The table below shows the daily expenditure on food of 25 households in a locality. Find the mean daily expenditure on food by a suitable method.

Watch Video Solution

5. Change the following data into 'less than type' distribution and draw its ogive:

Class Interval	Frequency
30 – 40	7
40 – 50	5
50 – 60	8
60 – 70	10
70 – 80	6
80 – 90	6
90 – 100	8

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6. about to only mathematics

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7. about to only mathematics

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Multiple Choice Questions

1. Find the class marks of class $10 - 25$ and $35 - 55$

A. 1.75 and 45

B. 1.75 and 4.5

C. 1.75 and 4.5

D. 17.5 and 45

Answer: D

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2. Write down the median class of the following frequency distribution:

Class Interval	Frequency
0 – 10	4
10 – 20	4
20 – 30	8
30 – 40	10
40 – 50	12
50 – 60	8
60 – 70	4

A. $20 - 30$

B. $30 - 40$

C. $40 - 50$

D. $50 - 60$

Answer: B

View Text Solution

3. Calculate the value of p from the following data:

Class	Frequency
0 – 20	8
20 – 40	15
40 – 60	p
60 – 80	12
80 – 100	5
	$N = \Sigma f_i = 60$

A. 20

B. 30

C. 45

D. 50

Answer: A

View Text Solution

4. In an inclusive series:

A. The lower class boundary is same as the upper class boundary of the previous class

B. The upper class boundary is same as the lower class boundary of the next class.

C. Both the lower and upper class boundaries are the same

D. The lower and upper class boundaries are contained within the class and do not intersect with either the upper boundary of the next class

Answer: D

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5. Inclusive series can be converted into the exclusive series.

$\Sigma f_i = 15, \Sigma f_i x_i = 3p + 36$ and mean of the distribution is 3, then p will be

A. 2

B. 3

C. 1

D. 6

Answer: B

View Text Solution

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6. If the value of mean and mode are 30 adn 15, respectively, then median will be:

A. 25

B. 24

C. 23.5

D. 26

Answer: A

View Text Solution

7. The mean of the first 10 natural numbers is:

A. 0

B. 5.5

C. 7

D. 5

Answer: B

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8. The relation between mean, median and mode 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

Answer: B

View Text Solution

9. Find the mode of the following data:

0, 5, 5, 1, 6, 4, 3, 0, 2, 5, 5, 6

A. 6

B. 4

C. 3

D. 5

Answer: D

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10. If median of the following data arranged in an ascending order is 25, then the value of x is:

5, 7, 10, 12, 2x-8, 2x+10, 35, 41,, 42, 50

A. 10

B. 13

C. 12

D. 11

Answer: C

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11. Find the value of y from the following observations if these are already arranged in ascending order. The median of the given observation is 63.

20, 24, 42, y, y+2, 73, 75, 80, 99

A. 61

B. 79

C. 45

D. 65

Answer: A

View Text Solution

12. A student scored the following marks in 6 subjects:

30, 19, 25, 30, 27, 30

Find his modal score:

A. 20

B. 25

C. 30

D. 26

Answer: C

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13. The mean of the frequency distribution are 28 and 16 respectively. Find the median:

A. 22.5

B. 24

C. 24.5

D. 26

Answer: C

View Text Solution

14. The median of the following frequency distribution will be:

x	6	7	5	2	10	9	3
y	9	12	8	13	11	14	7

A. 7

B. 4

C. 5

D. 6

Answer: D

View Text Solution

15. If $\Sigma f_i = 17, \Sigma f_i x_i = 4p + 63$ and mean = 7, then p is:

A. 14

B. 13

C. 12

D. 11

Answer: A

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16. The wickets taken by a bowler in 10 matches are:

2, 6, 4, 5, 0, 2, 1, 3, 2, 3

Find the mode:

A. 1

B. 2

C. 4

D. 3

Answer: B

View Text Solution

17. What is the mean of the following data:

Class interval	50–60	60–70	70–80	80–90	90–100
F	8	6	12	11	13

A. 78

B. 68

C. 48

D. 58

Answer: A

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18. The mode of a frequency distribution can be determined graphically from .....

A. Bar graph

B. ogive

C. Histogram

D. Pie chart

Answer: C

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19. If the mode of the data: 16, 15, 17, 16, 15, x, 19, 17, 14 is 17, then the value of x is.....

A. 18

B. 10

C. 27

D. 17

Answer: D

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20. If the mean of observations $x_1, x_2, x_3, \ldots . X_n$ is, $\bar{x}$ then the mean of $ax_1, ax_2, ax_3, \ldots , ax_n$ is

A. $\bar{x}$

B. $a + \bar{x}$

C. $a\bar{x}$

D. None of these

Answer: C

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21. Which of the following cannot be determine graphically ?

A. Mean

B. Median

C. Mode

D. None of these

Answer: A

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22. If the mean of first n natural number is 15, then n=

A. 15

B. 30

C. 14

D. 29

Answer: D

View Text Solution

23. For the following distribution:

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

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

A. 15

B. 25

C. 30

D. 35

Answer: B

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24. Consider the following frequency distribution:

Class	Frequency
0 – 5	13
6 – 11	10
12 – 17	15
18 – 23	8
24– 29	11

The upper limit of the median class is:

A. 11.5

B. 17.5

C. 23.5

D. 29.5

Answer: B

View Text Solution

25. If the mean of observation $x_1, x_2, \ldots, x_n$ is $\bar{x}$ then the mean of $x_1 + a, x_2 + a, \ldots . X_n + a$ is

A. $a\bar{x}$

B. $\bar{x} - a$

C. $\bar{x} + a$

D. ax

Answer: C

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26. The mean of n observations is $\bar{x}$. If the first item is increased by 1, second by 2 and so on, then the new mean is:

A. $\bar{x} + n$

B. $\bar{x} + n^2$

C. $\bar{x} + (n+1)^2$

D. None of these

Answer: C

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27. The arithmetic mean and mode of a data are 24 and 12 respectively, then its median is:

A. 25

B. 18

C. 20

D. 22

Answer: C

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28. While computing mean of grouped data, we assume that the frequencies are:

A. Evenly distributed over all the classes

B. Centred at the classmarks of the classes

C. Centred at the upper limits of the classes

D. Centred at the lower limits of the classes

Answer: C

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29. If x_i's are the mid-points of the class intervals of grouped data $f_i's$ are the corresponding frequencies and $\bar{x}$ is the mean, then $\Sigma(x_i f_i - \bar{x})$ equal to:

A. 0

B. -1

C. 1

D. 2

Answer: A

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30. If 35 is removed from the data: 30, 34, 35, 36, 37, 38, 39, 40 then the median increases by:

A. 2

B. 1.5

C. 1

D. 0.5

Answer: D

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31. In the formula $\bar{x} = a + \frac{\Sigma f_i d_i}{\Sigma f_i}$ finding the mean of grouped data di's are deviations from :

A. lower limits of classes

B. upper limits of classes

C. mid-points of classes

D. frequency of the class marks

Answer: C

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32. The mean of 1, 3, 4, 5,7, 4, is m. The number 3, 2, 2, 4, 3, 3, p have mean m-1 and median q. Then p+q=

A. 4

B. 5

C. 6

D. 7

Answer: D

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33. If the mean of frequency distribution is 8.1 and $\Sigma f_i x_i = 132 + 5k, \Sigma f_i = 20$, then k=

A. 3

B. 4

C. 5

D. 6

Answer: D

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34. The mean of 20 numbers is zero, them at most, how many may be greater than zero ?

A. 0

B. 1

C. 10

D. 19

Answer: D

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35. For a symmetrical frequency distribution, we have:

A. Mean $<$ Mode $<$ Median

B. Mean $<$ Mode $>$ Median

C. Mean= Mode= Median

D. Mode =12+ 12 (Mean + Median)

Answer: C

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36. The median and mode of a frequency distribution are 26 and 29 respectively. Then, the mean is:

A. 27.5

B. 24.5

C. 28.4

D. 25.8

Answer: B

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37. The algebraic sum of the deviations of a frequency distribution from its mean is:

A. Always positive

B. Always negative

C. 0

D. A non-zero number

Answer: C

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38. If the mean of a data is 27 and its median is 33. Then, the mode is:

A. 30

B. 43

C. 45

D. 47

Answer: C

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39. If the median of the data 4, 7, x-1, x-3, 16, 25 written is ascending order is 13, then x is equal to

A. 13

B. 14

C. 15

D. 16

Answer: C

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40. If mode of a series exceeds its mean by 12, then mode exceeds the median by:

A. 4

B. 8

C. 6

D. 10

Answer: B

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41. 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 40	48
More than or equal to 50	42

the frequency of the class $30 - 40$ is

A. 3

B. 4

C. 48

D. 51

Answer: A

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42. If the mean of the following distribution is 2.6, then the value of y is:

Variable (x)	Frequency
1	4
2	5
3	y
4	1
5	2

A. 3

B. 8

C. 13

D. 24

Answer: B

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43. If the mean of 6, 7, x, 8, y, 14 is 9, then:

A. $x + y = 21$

B. $x + y = 19$

C. $x - y = 19$

D. $x - y = 21$

Answer: B

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44. For the following distribution:

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

the modal class is:

A. $10 - 20$

B. $20 - 30$

C. $30 - 40$

D. $50 - 60$

Answer: C

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45. The times, in seconds, taken by 150 atheletes to run a 110m hurdle race are tabulated below:

Class	Frequency
13.8 – 14	2
14 – 14.2	4
14.2 – 14.4	5
14.4 – 14.6	71
14.6 – 14.8	48
14.8 – 15	20

The number of atheletes who completed the race in less then 14.6 seconds is:

A. 11

B. 71

C. 82

D. 130

Answer: C

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46. Consider the frequency distribution of the heights of 60 students of a class.

Height (in cm.)	No. of students	Cumulative frequency
150 – 155	16	16
155 – 160	12	28
160 – 165	9	37
165 – 170	7	44
170 – 175	10	54
175 – 180	6	60

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

A. 310

B. 315

C. 320

D. 330

Answer: B

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47. Find the class marks of class 10 - 25 and 35 - 55:

A. 1.75 and 45

B. 17.5 and 4.5

C. 1.75 and 4.5

D. 17.5 and 45

Answer: D

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48. $\sum f_i = 15, \sum f_i x_i = 3p + 36$ and mean of the distribution is 3, then p will be:

A. 2

B. 3

C. 1

D. 6

Answer: B

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49. If the value of mean and mode are 30 and 15, respectively, then median will be:

A. 25

B. 24

C. 23.5

D. 26

Answer: A

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50. The mean of the first 10 natural numbers is:

A. 0

B. 5.5

C. 7

D. 5

Answer: B

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51. The relation between mean, median and mode 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

Answer: B

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52. If $\sum f_i = 17, \sum f_i x_i = 4p + 63$ and mean=7, then p is :

A. 14

B. 13

C. 12

D. 11

Answer: A

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53. If the mean of observations $x_1, x_2, x_3, \ldots\ldots$ x_n is, $\bar{x}$, then the mean of $ax_1, ax_2, ax_3, \ldots\ldots, ax_n$, is:

A. $\bar{x}$

B. $a + \bar{x}$

C. $a\bar{x}$

D. None of these

Answer: C

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54. Which of the following cannot be determined graphically?

A. Mean

B. Median

C. Mode

D. None of these

Answer: A

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55. If the mean of first n natural number is 15, then n =

A. 15

B. 30

C. 14

D. 29

Answer: D

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56. While computing mean of grouped data, we assume that the frequencies are:

A. Evenly distributed over all the classes

B. Centred at the classmarks of the classes

C. Centred at the upper limits of the classes

D. Centred at the lower limits of the classes

Answer: B

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57. In the formula $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$ finding the mean of 15 grouped data d_i's are deviations from:

A. lower limits of classes

B. upper limits of classes

C. mid-points of classes

D. frequency of the class marks

Answer: C

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58. For a symmetrical frequency distribution, we have:

A. Mean $<$ Mode $<$ Median

B. Mean $<$ Mode $>$ Median

C. Mean=Mode=Median

D. Mode=12+12(Mean+Median)

Answer: C

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59. The algebraic sum of the deviations of a frequency distribution from its mean is:

A. Always positive

B. Always negative

C. 0

D. A non-zero number

Answer: C

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60. If mode of a series exceeds its mean by 12, then mode exceeds the median by:

A. 4

B. 8

C. 6

D. 10

Answer: B

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Very Short Answer Type Questions

1. If empirical relationship between mean, median and mode is expressed as Mean= k(3 Median- Mode), then find the value of k.

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2. The following table provides data about the weekly wages (in Rs) of workers in a factory. Calculate the Mean and the Modal Class.

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3. Atual donates Rs 1000 per month to a cow shelter, Rs 2000 per month to blind school Rs 3000 per month to a charitable hospital and Rs 4000 per month to a welfare society and remains for his own purpose. Find the average of his donation.

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4. If empirical relationship between mean, median and mode is expressed as Mean=k (3 Median - Mode), then find the value of k.

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Short Answer Type Questions

1. The average score of boys in the examination of a school is 71 and that of the girls is 73. The average score of the school in

the examination is 71.8. Find the ratio of number of boys of the number of girls who appeared in the examination.

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2. The average score of boys in the examination of a school is 71 and that of the girls is 73. The average score of the school in the examination is 71.8. Find the ratio of number of boys of the number of girls who appeared in the examination.

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Evaluation And Analysis Based Questions

1. Given

$\Sigma_1^n(x_i - 3n) = 84$ and $\Sigma_1^n(x_i + 2n) = 144$,

find n and the mean

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2. The A.M. of n observation is M. If the sum of n-4 observations is a, then find the mean of

remaining 4 observations.

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3. The mean of marks scored by 100 students was found to be 40. Later on, it was discovered that a score of 53 was misread as 83. Find the correct mean.

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Assertion And Reasoning Based Questions

1. Assertion: The median of an ungrouped data and the median calculated when the same data grouped are always the same.

Reason: The formula we used is based on the assumption that the observations in the classes are uniformly distributed

A. Both the Assertion and the Reason are correct and Reason is the correct explanation of the Assertion.

B. Both the Assertion and the Reason are correct but Reason is not the correct explanation of the Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: C

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2. Assertion: The mean, mode and median of grouped data will always be different.

Reason: Mean= sum of all observations/number of observations.

A. Both the Assertion and the Reason are correct and Reason is the correct explanation of the Assertion.

B. Both the Assertion and the Reason are correct but Reason is not the correct explanation of the Assertion

C. Assertion is true but Reason is false

D. Both Assertion and Reason are false

Answer: B

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