Ravi Maths Tuition

Statistics

10th Standard

Maths

Multiple Choice Question 54 x 1 = 54

1) Light enters from air to glass plate having refractive index 1.5. The speed of light in glass is

(a) 5.5×10^{10} ms^{-1} (b) 2×10^{8} ms^{-1} (c) 6.25×10^{7} ms^{-1} (d) 4×10^{8} ms^{-1}

2) Raj is standing in front of a plane mirror. The distance between Raj and his image is 100cm. If the distance between the mirror and image is x. What could be the possible value of x?

(a) x = 25 cm (b) x = 50 cm (c) x = 200 cm (d) x = 100 cm

3) A student obtained a sharp image of the grills of a window on a screen using a concave mirror. His teacher remarked that for getting better results a well lit distance object (preferably the sun) should be focussed on the screen. What should be done for this purpose?

(a) Move the screen slightly away from the mirror

(b) Move the screen and the mirror away form the object

(c) Move the mirror slightly towards the screen (d) Move the screen and the mirror towards the object

4) Which one of the following materials cannot be used to make lens?

(a) Glass (b) Clay (c) Water (d) Plastic

5) Light is refracted when it travels at an angle from water into air because

(a) Its speed is decreased (b) Its speed remains the same

(c) It is moving from a less dense medium to a denser medium (d) Its speed is increased

6) The mean of a data set with 12 observations is calculated as 19.25. If one more value is included in the data, then for the new data with 13 observations, mean becomes 20. The value of this 13th observation is

(a) 29 (b) 28 (c) 30 (d) 31

7) The mean of the following data is: 45, 35, 20, 15, 25, 40

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

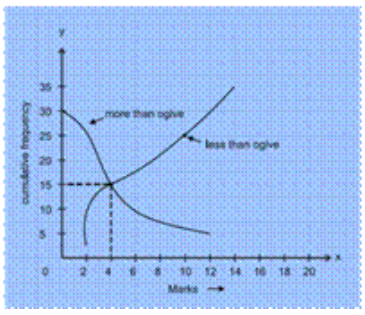
8) If the median of the following data is 166.79, then the mean and mode are

Class Interval	Frequency
130-140	5
140-150	9
150-160	17
160-170	28
170-180	24
180-190	10
190-200	7

(a) Mode = 161.9 Mean = 168 (b) Mode = 152.9 Mean = 166.73 (c) Mode = 160.9 Mean = 167

(d) Mode = 167.3, Mean = 168.03

9) Which measure of central tendency is obtained graphically by the point of intersection of less than and more than o gives



(a) Arithmetic mean (b) Geometric mean (c) Mode (d) Median

10) A batsman in his 12th innings makes a score of 63 runs and thereby increases his average score by 2. His average score after 12th

(a) 41 (b) 60 (c) 51 (d) 45

11) The median of first ten natural numbers is

(a) 6 (b) 5.5 (c) 11 (d) 5

12)

Expendicture	0-10	10-20	20-30	30-40	40-50
No. of families	14	23	27	21	15

What is the mode of the given data?

(a) 25 (b) 27 (c) 22 (d) 21

13) The median of the following data is:

Rent (in Rs)	15-25	25-35	35-45	45-55	55-65	65-75	75-85	85-95
No. of houses	8	10	15	25	40	20	15	7

(a) 65 (b) 45 (c) 50 (d) 58

14) If the coordinates of the point of intersection of less than ogive and more than ogive is (12.5, 20) then the value of median is

(a) 12.5 (b) 6.5 (c) 20 (d) 12

15) For the following distribution the differences in the upper limit of median and modal class is

C1	0-10	10-20	20-30	30-40	40-50
F	2	5	7	5	2

(a) 40 (b) 10 (c) 0 (d) 20

16) Median of the data given below will lie in the class

Height(in cm)	frequency
Below 140	4
140-145	7
145-150	18
150-155	11
155-160	6
160-165	5

(a) 150-155 (b) 140-145 (c) 160-165 (d) 145-150

17) The relation connecting the measures of central tendencies is

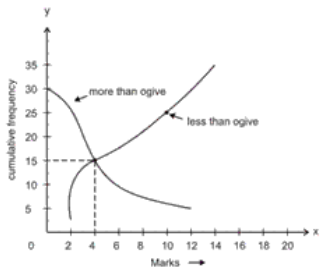
(a) Mode = 2 median + 3 mean (b) Mode = 3 median – 2 mean (c) Mode = 3 median + 2 mean

(d) Mode = 2 median – 3 mean

18) A boy scored the following marks in various tests during a term, each test being marked out of 20 15, 17, 16, 7, 10, 12, 14, 16, 19, 12, 16. The median marks are

(a) 15 (b) 16 (c) 13 (d) 18

19) Median of the data represented below is



(a) 3 (b) Less than 4 (c) 4 (d) Between 2-4

20) For a symmetrical distribution, which is correct

(a) Mean = Median = Mode (b) Mean < Mode < Median (c) Mean > Mode > Median

(d) Mode = Mean + Median/2

21) The value of the observation having greatest frequency is called____

(a) Mean (b) Median (c) Mode (d) All of above

22) The mode, median and mean of the following data are:

Marks obtained	Frequency	Cumulative Frequency
0-10	5	5
10-20	10	15
20-30	18	33
30-40	30	63
40-50	20	83
50-60	12	95
60-70	5	100

(a) mode = 35.45, median = 35.66, mean = 35.76 (b) mode = 34.3, median = 36.7, mean = 36.7

(c) mode = 33.3, median = 35.7, mean = 36.4 mode = 45.3, median = 32.7, mean = 35.4

(d) mode = 45.3, median = 32.7, mean = 35.4

23) Which measure of central tendency takes in account all the data?

(a) Mean (b) Median (c) Mode (d) All of the above

24) Frequency table of the marks of 50 students as given below:

Marks Obtained	0-10	10-20	20-30	30-40	40-50	50-60
No of students	3	f_1	20	10	5	f_2

Given that the median marks are 28.5, the missing frequencies will be

(a) $f_1 = 7, f_2 = 9$ (b) $f_1 = 5, f_2 = 7$ (c) $f_1 = 8, f_2 = 7$ (d) $f_1 = 7, f_2 = 5$

25) For the following distribution the modal class is

Marks below	10	20	30	40	50	60
Number of students	2	11	25	45	57	75

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

26) Mode is not affected by

(a) Maximum value (b) Minimum value (c) Extreme values (d) All of the above

27) If there are two class intervals 10-20 and 20-30, then in which interval will 20 fall?

(a) 10-20 (b) 20-30 (c) Neither in 10-20 nor 20-30 (d) In both, 10-20 and 20-30

28) The mean of 5 observations x, x + 2, x + 4, x + 6 and x + 8 is 11, then the value of x is:

(a) 6 (b) 11 (c) 4 (d) 7

29) If the mean of the following data is 18.75, then the value of p is

x_1	10	15	p	25	30
f_1	5	10	7	8	2

(a) 18.5 (b) 20 (c) 15 (d) 30

30) Calculate mode of the following data: 20,60,70,70,60,70,60,10,70,80

(a) 70 (b) 20 (c) 80 (d) 60

31) The lower limit of the modal class of the following data is

C.I	0-10	10-20	20-30	30-40	40-50
Frequency	5	8	13	7	6

(a) 10 (b) 50 (c) 30 (d) 20

32) If the mean and the median are 25.41 and 26.5 respectively. then the mode is

(a) 29 (b) 28.68 (c) 25.6 (d) 28

33) Find the median class of the following distribution

Class	100-200	200-300	300-400	400-500	500-600	600-700
Frequency	25	35	26	44	18	12

(a) 400-500 (b) 300-400 (c) 200-300 (d) 500-600

34)

Expenditure	0-10	10-20	20-30	30-40	40-50
No of famileis	14	23	27	21	15

What is the mode of the given data

(a) 24 (b) 22 (c) 25 (d) 21

35) The mean of a data set with 12 observations is calculated as 19.25. If one more value is included in the data, then for the new data with 13 observations, mean becomes 20. Value of this 13th observation is

(a) 30 (b) 28 (c) 31 (d) 29

36) The mean and median of same data are 24 and 26 respectively. The value of mode is :

(a) 23 (b) 25 (c) 30 (d) 26

37) What is the empirical relationship between the three measures of central tendency?

(a) 3 Mean = Mode + 2 Median (b) 3 Median = Mode + 2 Mean (c) 3 Median = 2Mode + Mean

(d) 3 Mean = 2Mode + Median

38) The median of the given data is 46 and the total number of items is 230

variable	Frequency	Cumulative Frequency
10-20	12	12
20-30	30	42
30-40	34	76
40-50	65	141
50-60	46	187
60-70	25	212
70-80	18	230

Using the formula Mode = 3 Median – 2 Mean, the mean will be

(a) 45.9 (b) 44.5 (c) 44 (d) 43

39) Ths symbol Σ(sigma) stands for

(a) Multiplication (b) Subtraction (c) Summation (d) Division

40) If the point of intersection of a less than and more than ogive is (15,20), then the value of median is

(a) 5 (b) 20 (c) 15 (d) 35

41) The mean of first ten even natural numbers is

(a) 30 (b) 11 (c) 100 (d) 10

42) If the mean of the following distribution is 6, find the value of 'p'.

x	2	4	6	10	p+6
f	3	2	3	1	2

(a) 7 (b) 12 (c) 8 (d) 6

43) If median of 20 observations is 50 and mode is also 50, then the mean is

(a) 55 (b) 49 (c) 50 (d) 45

44) For the following frequency distribution

Class	Frequency
0-5	2
5-10	7
10-15	18
15-20	10
20-25	8
25-30	5

If the mode and the median are 12.9 and 14.44 respectively, then the mean is

(a) 15.2 (b) 16 (c) 13 (d) 17

45) If for a distribution $\sum_1^n f_i x_i = 132 + 5p, \sum_1^n f_i = 20$ and mean of the distribution is 8.1, then the value of p is

(a) 3 (b) 6 (c) 4 (d) 5

46) If the mean and median of a data are 10 and 11 respectively, then mode of the data is

(a) 12 (b) 8 (c) 20 (d) 13

47) The mean of five observations is 15. If the mean of first three observations is 14 and that of the last three observations is 17, then the third observation is

(a) 20 (b) 19 (c) 18 (d) 17

48) If the mean of five observations x, x + 2, x + 4, x + 6 and x + 8 is 11, then the values of x is

(a) 4 (b) 7 (c) 11 (d) 6

49) 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

50) The time in seconds, taken by 150 athletes to run a 100m hurdle race are tabulated below

Time (sec)	13-14	14-15	15-16	16-17	17-18	18-19
Number of Athletes	2	4	5	71	48	20

The number of athletes who completed the race in less than 17 sec, is

(a) 11 (b) 71 (c) 82 (d) 68

51) For the following distribution

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

The lower limit of modal class is

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

52) The median of first seven prime numbers is

(a) 5 (b) 7 (c) 11 (d) 13

53) The median class for the data given below is

Class	20-40	40-60	60-80	80-100	100-120
Frequency	10	12	14	13	17

(a) 80 - 100 (b) 20 - 40 (c) 40 - 60 (d) 60 - 80

54) If the mean and the mode of a distribution are 15 and 18 respectively, then the median of the distribution is

(a) 17 (b) 15 (c) 16 (d) 18

2 Marks 82 x 2 = 164

55) Write the empirical relationship between the three measures of central tendency.

56) Find the mode of the data, using an empirical formula, when it is given that median=41.25 and mean=33.75.

57) The abscissa of the point of intersection of the less than type and more than type cumulative frequency curves of a grouped data gives which measure of central tendency?

58) In an arranged series of 4n terms, which term is median?

59) If $u_i = \frac{x_i - 20}{10}$, $\sum f_i u_i = 30$ and $\sum f_i = 40$, find the value of $\overline{x}$.

60) If the mean of the following distribution is 6, find the value of a.

$\mathbf{X_I}$	2	4	6	10	a+5
$\mathbf{F_I}$	3	2	3	1	2

61) In the following distribution, find the number of families having income range 16000-19000 (in RS).

MONTHLY INCOME RANGE (IN RS)	NUMBER OF FAMILIES
Income more than RS.10000	100
Income more than RS.13000	85
Income more than RS.16000	69
Income more than RS.19000	50
Income more than RS.22000	33
Income more than RS.25000	15

62) For the following distribution, find the modal class.

MARKS	NUMBER OF STUDENTS
Below 10	3
Below 20	12
Below 30	27
Below 40	57
Below 50	75
Below 60	80

63) If x_i 's are the mid-points of the class intervals of grouped data, f_1's are corresponding frequencies and $\overline{x}$ is the mean, find the value of $\sum (f_i x_i - \overline{x})$.

64) The time (in seconds) taken by 150 athletes to run a 110m hurdle race are tabulated below:

CLASS INTERVAL	FREQUENCY
13.8-14.0	2
14.0-14.2	4
14.2-14.4	5
14.4-14.6	71
14.6-14.8	48
14.8-15.0	20

Find the number of athletes, who completed the race in less than 14.6 s.

65) Consider the following data:

CLASS INTERVAL	65-85	85-105	105-125	125-145	145-165	165-185	185-205
FREQUENCY	4	5	13	20	14	7	4

Find the difference of the upper limit of the median class and the lower limit of the modal class.

66) Find the value of k for the following distribution whose mean is 16.6.

$\mathbf{X_I}$	8	12	15	k	20	25	30
$\mathbf{F_I}$	12	16	20	24	16	8	4

67) The following table gives the number of pages written by Sarika 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 number of pages written per day.

68) Construct the frequency distribution table for the given data.

MARKS	**NUMBER OF STUDENTS**
Less than 10	14
Less than 20	22
Less than 30	37
Less than 40	58
Less than 50	67
Less than 60	75

69) In this following frequency distribution table, find the missing values.

CLASS INTERVAL	0-8	8-16	16-24	24-32	32-40	40-48
FREQUENCY	15	f_1	f_2	18	9	f_3
CUMULATIVE FREQUENCY	15	28	43	61	f_4	80

70) If the mean of the following distribution is 2.6, then find the value of y

VARIABLE	1	2	3	4	5
FREQUENCY	4	5	y	1	2

71) Calculate mode of the following data.

MARKS OBTAINED	0-20	20-40	40-60	60-80	80-100
NUMBER OF STUDENTS	8	10	12	6	3

72) In a class test, 50 students obtained marks as follows.

MARKS OBTAINED	0-20	20-40	40-60	60-80	80-100
NUMBER OF STUDENTS	4	6	25	10	5

Find the modal class and the median class.

73) If mode=80 and mean=110, then find the median.

74) If $u_i = \frac{x_i - 25}{10}, \sum f_i u_i = 20$ and $\sum f_i = 100$, then find the value of $\overline{x}$.

75) If the mean of the following data is 18.75, then find the value of p.

$\mathbf{X_I}$	10	15	p	25	30
$\mathbf{F_I}$	5	10	7	8	2

76) Find p, the mean of the given data is 15.45.

CLASS INTERVAL	0-6	6-12	12-18	18-24	24-30
FREQUENCY	6	8	p	9	7

77) Find the mode of the given data.

CLASS INTERVAL	3-6	6-9	9-12	12-15	15-18	18-21	21-24
FREQUENCY	2	5	10	23	21	12	3

78) The weight (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.

79) Karan scored 36 marks in English, 44 marks in Hindi, 75 marks in Mathematics and x marks in science. If he has scored an average of 50 marks, then find the value of x.

80) The ages of employees in a factory are as follows:

AGE (IN YEARS)	17-23	23-29	29-35	35-41	41-47	47-53
NUMBER OF EMPLOYEES	2	5	6	4	2	1

Find the median age of the employees.

81) In the following data, find the values of p and q. Also, find the median class and modal class.

CLASS INTERVAL	100-200	200-300	300-400	400-500	500-600	600-700
FREQUENCY	11	12	10	q	20	14
CUMULATIVE FREQUENCY	11	p	33	46	66	80

82) If the median of a series exceeds the mean by 3, find by what number the mode exceeds its mean?

83) From the following frequency distribution, find the median class

Cost of living Index	1400-1550	1550-1700	1700-1850	1850-2000
Number of Weeks	8	15	21	8

84) In the following frequency distribution, find the median class.

Height (in cm)	140-145	145-150	150-155	155-160	160-165	165-170
Frequency	5	15	25	30	15	10

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

86) Consider the following distribution:

Marks Obtained	0 or More	10 or More	20 Or More	30 Or More	40 Or More	50 Or More
Number of students	63	58	55	51	48	42

(i) Calculate the frequency of the class 30 - 40.
(ii) Calculate the class mark of the class 10 - 25

87) Find the mean of the data using an empirical formula when it is given that mode is 50.5 and median in 45.5

88) The regarding marks obtained by 48 students of a class in a class test is given below. Calculate the modal marks of students.

MARKS OBTAINED	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
NUMBER OF STUDENTS	1	0	2	0	0	10	25	7	2	1

89) Find the value of λ if the mode of the following data is 20 :
15,20,25, 18, 13, 15,25, 15, 18, 17, 20, 25, 20, λ ,18

90) The mean and median of 100 observations are 50 and 52 respectively. The value of the largest observation is 100. It was later found that it is 110 not 100. Find the true mean and median.

91) Find the arithmetic mean of the following frequency distribution

$\mathbf{X_I}$	3	4	5	7	10
$\mathbf{F_I}$	3	4	8	5	10

92) Given below is the distribution of weekly pocket money received by students of a class. Calculate the pocket money that is received by most of the students.

POCKET MONEY (IN RS)	0-20	20-40	40-60	60-80	80-100	100-120	120-140
NUMBER OF STUDENTS	2	2	3	12	18	5	2

93) Find the mean of the following distribution

CLASS INTERVAL	0-6	6-12	12-18	18-24	24-30
FREQUENCY	5	4	1	6	4

94) The following table gives the life time in days of 100 bulbs

LIFE TIME IN DAYS	Less than 50	Less than 100	Less than 150	Less than 200	Less than 250	Less than 300
NUMBER OF BULBS	8	23	55	81	93	100

95) Find the unknown values in the following table

CLASS INTERVAL	**FREQUENCY**	**CUMULATIVE FREQUENCY**
0-10	5	5
10-20	7	x_1
20-30	x_2	18
30-40	5	x_3
40-50	x_4	30

96) 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

97) 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
FREQUENCY	1	3	5	9	7	3

98) Write the relationship connecting three measures of central tendencies. Hence find the median of the given data if mode is 24.5 and mean is 29.75

99) The following distribution shows the marks scored by 140 students in an examination. Calculate the mode of the distribution.

MARKS	0-10	10-20	20-30	30-40	40-50
NUMBER OF STUDENTS	20	24	40	36	20

100) Find the unknown entries a, b, c, d in the following distribution of heights of students in a class

HEIGHT (IN CM)	**FREQUIENCY**	**CUMULATIVE FRQUENCY**
150-155	12	12
155-160	a	25
160-165	10	b
165-170	c	43
170-175	5	48
175-180	2	d

101) Find the mode of the following distribution

CLASSES	25-30	30-35	35-40	40-45	45-50	50-55
FREQUENCY	25	34	50	42	38	14

102) Find x and y from the following cumulative frequency distribution

CLASSES	**?FREQUENCY**	**C.F**
0-8	15	15
8-16	x	28
16-24	15	43
24-32	18	y
32-40	09	70

103) The frequency distribution of agricultural holdings in a village is given below:

AREA OF LAND (IN HECTARE)	1-3	3-5	5-7	7-9	9-11	11-13
NUMBER OF FAMILIES	20	45	80	55	40	12

Find the modal agricultural holdings of the village

104) Write the median class of the following distribution

CLASSES	0-10	10-20	20-30	30-40	40-50	50-60	60-70
FREQUENCY	4	4	8	10	12	8	4

105) The following are the ages of 300 patients getting rnedical treatrnent in a hospital on a particular day

AGE (IN YEARS)	10-20	20-30	30-40	40-50	50-60	60-70
NUMBER OF STUDENTS	60	42	55	70	53	20

Forrn the "less than type" cumulative frequency distribution table

106) Find the rnean of the following data

CLASSES	**FREQUENCY**
0.5-5.5	13
5.5-10.5	16
10.5-15.5	22
15.5-20.5	18
20.5-25.5	11

107) Find the mean number of plants per house from the following data

NUMBER OF PLANTS	0-2	2-4	4-6	6-8	8-10	10-12	12-14
NUMBER OF HOUSES	1	2	1	5	6	2	3

108) Given below is a cumulative frequency distribution showing the marks secured by 50 students of a class

MARKS	**NUMBER OF STUDENTS**
Below 20	17
Below 40	22
Below 60	29
Below 80	37
Below 100	50

Form the frequency distribution table for the above data.

109) Find the mode of the following frequency distribution

CLASSES	0-6	6-12	12-18	18-24	24-30
FREQUENCY	7	5	10	12	6

110) Find the mean of the following frequency distribution:

CLASS	0-6	6-12	12-18	18-24	24-30
FREQUENCY	7	5	10	12	6

111) Find the mean of first five odd multiples of 5.

112) Median of a data is 52.5 and its mean is 54, use empirical relationship between three measures of central tendency to find its mode

113) The mean of the following frequency distribution is 25. Find the value of p

CLASS INTERVAL	0-10	10-20	20-30	30-40	40-50
FREQUENCY	5	6	10	6	p

114) The data regarding the heights of 50 girls of class X of a school is given below:

HEIGHT (IN CM)	120-130	130-140	140-150	150-160	160-170	Total
NUMBER OF GIRLS	2	8	12	20	8	50

Change the above distribution to 'more than type' distribution

115) Convert the following distribution to more than type, cumulative frequency distribution:

CLASS	50-60	60-70	70-80	80-90	90-100
FREQUENCY	12	18	10	15	5

116) Convert the following cumulative distribution to a frequency distribution

HEIGHT (IN CM)	Less than 140	less than 145	less than 150	less than 155	less than160	less than 165
NUMBER OF STUDENTS	4	11	29	40	46	51

117) Prepare a cumulative frequency distribution of more than type for the following data

MARKS	0-10	10-20	20-30	30-40	40-50
NUMBER OF STUDENTS	3	8	15	7	5

118) Change the following distribution to 'more than type' of distribution

DAILY INCOME (IN RS)	**100-20**	**120-140**	**140-160**	**160-180**	**180-200**
Number of students	12	14	8	6	10

119) Convert the followmg data mto 'more than type' distribution :

CLASS	50-55	55-60	60-65	65-70	70-75	75-80
FREQUENCY	2	8	12	24	38	16

120) Which central tendency is obtained by the abscissa of point of intersection of less type and more than type ogives ?

121) What is abscissa of the point of intersection of the "Less than type" and of the "More than type" cumulative frequency curve of a grouped data

122) Given below is a frequency distribution table showing daily income of 100 workers of a factory

DAILY INCOME OF WORKERS(IN RS)	200-300	300-400	400-500	500-600	600-700
NUMBER OF WORKERS	12	18	35	20	15

Convert this table to a cumulative frequency distribution table of 'more than type

123) The given distribution shows the number of runs scored by the batsmen in inter-school cricket matches

RUNS SCORED	0-50	50-100	100-150	150-200	200-250
NUMBER OF BATSMAN	4	6	9	7	5

Draw a ' more than type' ogive for the above data.

124) (i) Find the mode of the following data
25, 16, 19, 48, 19, 20, 34, 15, 19, 20, 21, 24, 19, 16, 22, 16, 18, 20, 16, 19.
(ii) If one of the 19's is changed to 16 in the above data, find the new mode.

125) A set of numbers consists of four 5,s, six 7's, ten 9's eleven 12's, three 13's, two 14,s. Find the mode of this set of numbers

126) The mean and median of same data are 24 and 26 respectively. Find mode of same data.

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

CLASS	**FREQUENCY**
13.8 - 14.0	2
74.0 - 14.2	4
14.2 - 14.4	5
14.4 - 14.6	77
14.6 - 14.8	48
14.8 - 15.0	20

Find the number of atheletes who completed the race in less then 14.6 seconds.

128) The mean monthly salary of the 12 employees of a firm is Rs. 1450. If one more person joins tire firm who gets Rs 1600 per month, what will be the mean monthly salary now?

129) Nine persons went to a hotel for taking their meals. Eight of them spent Rs.12 each on their meals and the ninth spent Rs.8 more than the average expenditure of all the nine. What was the total money spent by them?

130) There were 35 students in a hostel. Due to the admission of 7 new students, the expenses of the mess were increased by Rs 42 per day while the average expenditure per head diminished by Rs 1. What was the original expenditure of the mess?

131) Find the mode of the following distribution:

CLASS INTERVAL	**FREQUENCY**
10-15	30
15-20	45
20 -25	75
25-30	35
30-35	25
35-40	15

132) Form the frequency distribution table from the following data:

MARKS (OUT OF 90)	**NUMBER OF CANDIDATES**
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

133) The distribution given below shows the runs scored by batsmen in one-day cricket matches. Find the mean number of runs.

Runs scored	0-40	40-80	80-120	120-160	160-200
Number of batsmen	12	20	35	30	23

134) Find the mean of the following distribution:

Class	3-5	5-7	7-9	9-11	11-13
Frequency	5	10	10	7	8

135) If the sum of deviations of a set of values x_1, x_2, x_3,... x_n measured from 50 is -10 and the sum of deviations of the values from 46 is 70. Rohit solve this question and get the mean of the data is 49.5. Is he right? Explain.

136) The mean temperature of a certain city for 31 consecutive days was found to be 35.7°C. Further, the mean temperature of the first 8 days was 28.4°C. The mean temperature of the next 12 days was 36.4°C. Find the mean temperature of the rest of the days. Show your work.
(**Note** Round the numbers to one decimal point.)

3 Marks 82 x 3 = 246

137) Find the mean of the following data.

X	**10**	**30**	**50**	**70**	**89**
f	7	8	10	15	10

138) The mean of the following data is 14. Find the value of k.

X	**5**	**10**	**15**	**20**	**25**
f	7	k	8	4	5

139) If the mean of the following distribution is 54, find the value of p.

CLASS	0-20	20-40	40-60	60-80	80-100
FREQUENCY	7	p	10	9	13

140) Find the mean of the following frequency distribution using assumed mean method.

CLASS	2-8	8-14	14-20	20-26	26-32
FREQUENCY	6	3	12	11	8

141) Find the mean of the following data, by using step deviation method.

CLASS	10-20	20-30	30-40	40-50	50-60	60-70
FREQUENCY	4	28	15	20	17	16

142) In a health checkup, the number of heart beats of women were recorded in the following table

NUMBER OF HEART BEATS/MINUTE	65-69	70-74	75-79	80-84
NUMBER OF WOMEN	2	18	16	4

Find the mean of the data.

143) In a class test, marks obtained by 120 students are given in the following frequency distribution. If it is given that mean is 59, then find the missing frequencies x and y.

MARKS	**NUMBER OF STUDENTS**
0-10	1
10-20	3
20-30	7
30-40	10
40-50	15
50-60	x
60-70	9
70-80	27
80-90	18
90-100	y

144) An NGO working for welfare of cancer patients, maintained its records as follows:

AGE OF PATIENTS (IN YEARS)	0-20	20-40	40-60	60-80
NUMBER OF PATIENTS	35	315	120	50

find mode.

145) If the mode of the following series is 54, then find the value of f.

CLASS	0-15	15-30	30-45	45-60	60-75	75-90
FREQUENCY	3	5	f	16	12	7

146) Find the median of the first ten prime numbers.

147) The set of data given below shows the ages of participants in a certain summer camp. Draw a cumulative frequency table for the data.

AGE (IN YEARS)	10	11	12	13	14	15
FREQUENCY	3	18	13	12	7	27

148) The following distribution gives cumulative frequencies of 'more than type'.

MARKS OBTAINED (MORE THAN OR EQUAL TO)	5	10	15	20
NUMBERS OF STUDENTS (CUMULATIVE FREQUENCY)	30	23	8	2

Change the above data into a continuous grouped frequency distribution.

149) The following distribution gives the daily income of 50 workers of a factory:

DAILY INCOME (IN RS)	100-120	120-140	140-160	160-180	180-200
NUMBER OF WORKERS	12	14	8	6	10

Write the above distribution as 'less than type' cumulative frequency distribution.

150) Find the median of the following data.

MARKS OBTAINED	20	29	28	42	19	35	51
NUMBER OF STUDENTS	3	4	5	7	9	2	3

151) Obtain the median for the following frequency distribution.

X	1	2	3	4	5	6	7	8	9
Y	8	10	11	16	20	25	15	9	6

152) 200 surnames were randomly picked up from a local telephone directory and the frequency distribution of the number of letters in English alphabets in the surnames was obtained as follows:

NUMBER OF LETTERS	0-5	5-10	10-15	15-20	20-25
NUMBER OF SURNAMES	20	60	80	32	8

Find the median of the above data.

153) If median=137 units and mean=137.05 units, then find the mode.

154) The daily income of a sample of 50 employees are tabulated as follows:

INCOME (IN RS)	1-200	201-400	401-600	601-800
NUMBER OF EMPLOYEES	14	15	14	7

Find the mean daily income of employees.

155) If the mode of the following frequency distribution is 31, then find the value of p.

CLASS	5-15	15-25	25-35	35-45	45-55
FREQUENCY	3	p	15	11	6

156) The following data is the distribution of student's height of a certain class in a certain city:

HEIGHT (IN CM)	160-162	163-165	166-168	169-171	172-174
NUMBER OF STUDENTS	15	118	142	127	18

Find the median height.

157) Find the value of k, if the mean of the following distribution is 20.

X	15	17	19	20+k	23
F	2	3	4	5k	6

158) Find the unknown entries m, n, o, p, q and r in the following distribution of heights of students in a class and the total number of students is 50.

HEIGHT (IN CM)	150-155	155-160	160-165	165-170	170-175	175-180
FREQUENCY	12	n	10	p	q	2
CUMULATIVE FREQUENCY	m	25	o	43	48	r

159) An incomplete distribution is given as follows:

Class interval	Frequency
0-10	10
10-20	20
20-30	?
30-40	40
40-50	?
50-60	25
60-70	15

The median value is 35 and the sum of all the frequencies is 170. Using the median formula, fill up the missing frequencies.

160) Find the mode of the following distribution.

CLASS INTERVAL	0-20	20-40	40-60	60-80	80-100
FREQUENCY	25	16	28	20	5

161) Compute the median for the following data.

CLASS INTERVAL (LESS THAN)	20	30	40	50	60	70	80	90	100
CUMULATIVE FREQUENCY	0	4	16	30	46	66	82	92	100

162) Find the mean of the following data and hence find the mode, given that median of the data is 42.5.

CLASS INTERVAL	10-20	20-30	30-40	40-50	50-60	60-70	70-80
FREQUENCY	4	8	10	12	10	4	2

163) From the following frequency distribution, prepare the "less then" ogive.

RAINFALL (IN CM)	5-15	15-25	25-35	35-45	45-55	55-65
NUMBER OF DAYS	22	10	8	15	5	6

164) Draw a 'more than type' ogive from the following distribution.

MARKS OBTAINED	10-19	20-29	30-39	40-49	50-59
NUMBER OF CANDIDATES	6	7	5	10	3

165) Draw a 'less than type' ogive for the following frequency distribution.

MARKS OBTAINED	10-10	10-20	20-30	30-40	40-50	50-60
NUMBER OF CANDIDATES	5	8	6	10	6	6

Find the median from the graph and also verify the result.

166) The following table gives the height of trees:

HEIGHT (LESS THAN)	7	14	21	28	35	42	49	56
NUMBER OF TREES	26	57	92	134	216	287	341	360

Draw 'less than ogive' and 'more than ogive'. Also, find the median.

167) Draw 'a more than ogive' for the frequency distribution and hence obtain the median.

CLASS INTERVAL	5-10	10-15	15-20	20-25	25-30	30-35	35-40
FREQUENCY	2	12	2	4	3	4	3

168) The weights of tea in 70 packets are shown in the following table:

WEIGHT (IN GRAMS)	200-201	201-202	202-203	203-204	204-205	205-206
NUMBER OF PACKETS	13	27	18	10	1	1

Draw the 'less than type' and 'more than type' ogives for the data.

169) The mean of the following distribution is 48 and sum of all the frequencies is 50. Find the missing frequencies x and y.

Class	20-30	30-40	40-50	50-60	60-70
Frequency`	8	6	x	11	y

170) Find the mean of the following distribution

Height (in cm)	Less than 75	Less than 100	Less than 125	Less than150	Less than 175	Less than 200
No of students	5	11	14	18	21	28
Height (in cm)	Less than 225	Less than 250	Less than 275	Less than 300		
No of students	33	37	45	50		

171) Following frequency distribution shows the daily expenditure on milk of 30 households in a locality

Daily Expenditure on Milk (in Rs)	0-30	30-60	60-90	90-120	120-150
Number in households	5	6	9	6	4

Find the mode for the above data

172) The weekly expenditure of 500 families is tabulated below

Weekly Expenditure (Rs)	Number of families
0-1000	150
1000-2000	200
2000-3000	75
3000-4000	60
4000-5000	15

Find the median expenditure.

173) Find the median of the following data:

Height (in cm)	Less than 120	Less than 140	Less than 160	Less than 180	Less that 200
Number of students	12	26	34	40	50

174) The mean of the following distribution is 31.4.Determine the missing frequency x.

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	5	x	10	12	7	8

175) Find the median life time of a bulb from the following bata

Life time (in hours)	0-250	250-500	500-750	750-1000	1000-1250	1250-1500
Number of bulbs	6	10	11	15	10	5

176) Calculate the mean of the following frequency distribution

Class	10-30	30-50	50-70	70-90	90-110
Frequency	15	18	25	10	2

177) Heights of students of class X are given in the following distribution

Height (in cm)	150-155	155-160	160-165	165-170	170-175
Number of students	15	8	20	12	5

Find the modal height

178) A school conducted a test (of 100marks) in English for students of Class X. The marks obtained by students are shown in the following table

Marks obtained	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Number of students	1	2	4	15	15	25	15	10	2	1

Find the modal marks.

179) The following frequency distribution shows the number of runs scored by some batsmen of India in one-day cricket matches:

Runs Scored	2000-4000	4000-6000	6000-8000	8000-10000	10000-12000
Number of batsman	9	8	10	2	1

Find the mode for the above data.

180) A group of students conducted a survey of their locality to collect the data regarding number of plants and recorded it in the following table:

Number of plants	0-3	3-6	6-9	9-12	12-15
Number of houses	2	4	5	1	2

Find the mode for the above data

181) If the median for the following frequency distribution is 28.5, find the value of x and y

Class	Frequencies
0-10	5
10-20	x
20-30	20
30-40	15
40-50	y
50-60	5

182) If the mean of the following data is 14.7, find the values of p and q

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

183) Find the mean and mode of the following frequency distribution

Classes	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	3	8	10	15	7	4	3

184) Find the mode of the following data

Marks	Below 10	Below 20	Below 30	Below 40	Below 50
Number of students	8	20	45	58	70

185) Find the mean of the following data:

Class	Less than 20	Less than 40	Less than 60	Less than 80	Less than 90
Frequency	15	37	74	99	120

186) Find the mean of the following data:

Classes	0-20	20-40	40-60	60-80	80-100	100-120
Frequency	6	8	10	12	8	4

187) Find the mean of the following distribution using step deviation method

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

188) Find the mean and median for the following data:

Class	0-10	10-20	20-30	30-40	40-50
Frequency	8	16	36	34	6

189) If the median of the following data is 240, then find the value of f:

Classes	0-100	100-200	200-300	300-400	400-500	500-600	600-700
Frequency	15	17	f	12	9	5	2

190) Following is the age distribution of patients admitted during a month in a hospital. Find the modal age of a patient.

Age in year	0-10	10-20	20-30	30-40	40-50	50-60	60-70	Total
No of patients	5	10	20	25	12	18	10	100

191) The following tables shows the weights (in gms) of a sample of 100apples, taken from a large consignment

weight(in gms)	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130
No of Apples	8	10	12	16	18	14	12	10

Find the median weight of apples.

192) The sum of deviations of a set of values x, x, x, ..., x, measured from 50 is - 10 and the sum of deviations$_1$, x_2, x_3, ..., x_n, measured from 50 is - 10 and the sum of deviations of the values from 46 is 70. Find the value of 11and the mean.

193) Prove that $\sum (x_i - \bar{x}) = 0$

194) The mean of 'n' observations is $\bar{x}$, if the first term is increased by 1, second by 2 and so on. What will be the new mean?

195) Weekly income of 600 families is given below

Income (in Rs)	0-1000	1000-2000	2000-3000	3000-4000	4000-5000	5000-6000
No of Families	250	190	100	40	15	5

196) Find the mean of the following distribution by step deviation method

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	5	13	20	15	7	5

Let assumed mean, a = 35 and h = 10

197) The mean of the following distribution is 53. Find the missing frequency p :

Class	0-20	20-40	40-60	60-80	80-100
Frequency	12	15	32	p	13

198) Find the mean for the following data:

Class	24.5-29.5	29.5-34.5	34.5-39.5	39.5-44.5	44.5-49.5	49.5-54.5	54.5-59.5
Frequency	4	14	22	16	6	5	3

199) Complete mean of the grouped data:

MONTHLY SALARY	**NO. OF PERSONS**
325.5 - 350.5	20
350.5 - 375.5	10
375.5 - 400.5	10
400.5 - 425.5	5
425.5 - 450.5	1
450.5 - 475.5	2
475.5 - 500.5	2

200) The table below gives the frequency distribution of the number of teachers in Higher Secondary Schools in 2012 in India. Find the average number of teachers per Higher Secondary School in India for 2012.

NUMBER OF TEACHERS	**NUMBER OF H.S. SCHOOLS**
6-10	955
11-15	1067
16 -20	1663
27 -25	1492
26-30	1220
31-35	7129
36-40	745
41-45	637
46-50	442

201) Find the mean age in years from distribution given below:

CLASS INTERVAL OF AGE IN YEAR	**FREQUENCY (F_I)**
25-29	4
30-34	14
35-39	22
40-44	16
45-49	6
50-54	5
55-59	3

202) Following is the distribution of marks obtained by 60 students in Economics test:

MARKS	**NO. OF STUDENTS**
More than 0	60
More than 10	56
More than 20	40
More than 30	20
More than 40	10
More than 50	3

Calculate the arithmetic mean.

203) Find median for the following data:

CLASS INTERVAL	**FREQUENCY**
10-19	2
20 -29	4
30-39	8
40-49	9
50-59	4
60-69	2
70 -79	1

204) 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:

Class interval	**10-25**	**25-40**	**40-55**	**55-70**	**70-85**	**85-100**
Number of students	**2**	**3**	**7**	**6**	**6**	**6**

Find the mean of the marks obtained by the students,

205) 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

206) In a class of 72 students, marks obtained by the students in a class test (out of 10) are given below

Marks obtained (out of 10)	1	2	3	4	5	7	9	10
Number of students	3	5	12	18	23	8	2	1

Find the mode of the data.

207) 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

208) It mode of the following series is 54, then find the value of f.

CLASS	0-15	15-30	30-45	45-60	60-75	75-90
FREQUENCY	3	5	f	16	12	7

209) Find mean of the following data.

Class	0-15	15-30	30-45	45-60	60-75	75-90
Frequency	12	15	11	20	16	6

210) In a class test, the mean score of the class is 60. Half the students of the class Scored 80 marks or above in the test.
Dipti said, "Each of the remaining half of the students would have definitely got 40 marks or below in the test for the mean to be 60 marks".
Prove or disprove Dipti's statement with a valid example.

211) The frequency distribution of daily rainfall in a town during a certain period is shown below.

Rainfall (in mm)	**Number of days**
0-20	7
20-40	x
40-60	10
60-80	4

Unfortunately, due to manual errors, the information on the 20-40 mm range got deleted from the data. If the mean daily rainfall for the period was 35 mm, find the number of days when the rainfall ranged between 20-40 mm. Show your work.

212) Find the mode of the following data.

Class	0-20	20-40	40-60	60-80	80-100	100-120	120-140
Frequency	6	8	10	12	6	5	3

213) The mode of the following frequency distribution is 38. Find the value of x.

Class interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	7	9	12	16	x	6	11

214) Shown below is a table representing the percentage distribution of mental health disorders of Asian countries in 2019.

Percentage of citizens with mental health disorders	**Number of Asian countries**
7.5 - 10	1
10 - 12.5	25
12.5 - 15	11
15 - 17.5	4
17.5 - 20	1

Can the median of the above data be greater than 12.5%? Give a valid reason.

215) 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.

216) An inter house cricket match was organized by a school. Distribution of runs made by the students is given below. Find the median runs scored.

Runs scored	0-20	20-40	40-60	60-80	80-100
Number of students	4	6	5	3	4

217) Following is the distribution of the long jump competition in which 250 students participated. Find the median distance jumped by the students. Interpret the median

Distance (in m)	0-1	1-2	2-3	3-4	4-5
Number of Students	40	80	62	38	30

218) A solid is in the shape of a right-circular cone surmounted on a hemisphere, the radius of each of them being 7 cm and the height of the cone is equal to its diameter. Find the volume of the solid $\left[\text{ use } \pi = \frac{22}{7}\right]$

Case Study Questions 21 x 4 = 84

219) An agency has decided to install customised playground equipments at various colony parks. For that they decided to study the age-group of children playing in a park of the particular colony. The classification of children according to their ages, playing in a park is shown in the following table

Age group of children (in years)	**6-8**	**8-10**	**10-12**	**12-14**	**14-16**
Number of children	**43**	**58**	**70**	**42**	**27**

Based on the above information, answer the following questions.

(i) The maximum number of children are of the age-group

(a) 12-14 (b) 10-12 (c) 14-16 (d) 8-10

(ii) The lower limit of the modal class is

(a) 10 (b) 12 (c) 14 (d) 8

(iii) Frequency of the class succeeding the modal class is

(a) 58 (b) 70 (c) 42 (d) 27

(iv) The mode of the ages of children playing in the park is

(a) 9 years (b) 8 years (c) 11.5 years (d) 10.6 years

(v) If mean and mode of the ages of children playing in the park are same, then median will be equal to

(a) Mean (b) Mode

(c) Both (a) and (b) (d) Neither (a) nor (b)

220) As the demand for the products grew, a manufacturing company decided to hire more employees. For which they want to know the mean time required to complete the work for a worker. The following table shows the frequency distribution of the time required for each worker to complete a work.

Time (in hours)	15-19	20-24	25-29	30-34	35-39
Number of workers	10	15	12	8	5

Based on the above information, answer the following questions.

(i) The class mark of the class 25-29 is

(a) 17 (b) 22 (c) 27 (d) 32

(ii) If x_i's denotes the class marks and f_i's denotes the corresponding frequencies for the given data, then the value of $\sum x_i f_i$ equals to

(a) 1200 (b) 1205 (c) 1260 (d) 1265

(iii) The mean time required to complete the work for a worker is

(a) 22 hrs (b) 23 hrs (c) 24 hrs (d) none of these

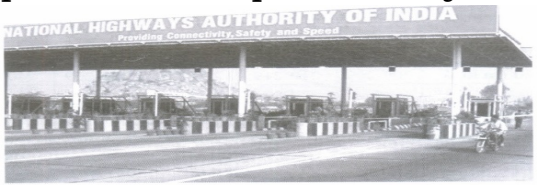
(iv) If a worker works for 8 hrs in a day, then approximate time required to complete the work for a worker is

(a) 3 days (b) 4 days (c) 5 days (d) 6 days

(v) The measure of central tendency is

(a) Mean (b) Median (c) Mode (d) All of these

221) On a particular day, National Highway Authority ofIndia (NHAI) checked the toll tax collection of a particular toll plaza in Rajasthan.



The following table shows the toll tax paid by drivers and the number of vehicles on that particular day.

Toll tax (in Rs)	**30-40**	**40-50**	**50-60**	**60-70**	**70-80**
Number of vehicles	**80**	**110**	**120**	**70**	**40**

Based on the above information, answer the following questions.

(i) If A is taken as assumed mean, then the possible value of A is

(a) 32 (b) 42 (c) 85 (d) 55

(ii) If x_i's denotes the class marks and f_i's denotes the deviation of assumed mean (A) from x_i's, then the minimum value of $|d_i|$ is

(a) -200 (b) -100 (c) 0 (d) 100

(iii) The mean of toll tax received. by NHAI by assumed mean method is

(a) Rs 52 (b) Rs 52.14 (c) Rs 52.50 (d) Rs 53.50

(iv) The mean of toll tax received by NHAI by direct method is

(a) equal to the mean of toll tax received by NHAI by assumed mean method

(b) greater than the mean of toll tax received by NHAI by assumed mean method

(c) less than the mean of toll tax received by NHAI by assumed mean method

(d) none of these

(v) The average toll tax received by NHAI in a day, from that particular toll plaza, is

(a) Rs 21000 (b) Rs 21900 (c) Rs 30000 (d) none of these

222) Transport department of a city wants to buy some Electric buses for the city. For which they wants to analyse the distance travelled by existing public transport buses in a day.

The following data shows the distance travelled by 60 existing public transport buses in a day.

Daily distance travelled (in km)	**200-209**	**210-219**	**220-229**	**230-239**	**240-249**
Number of buses	**4**	**14**	**26**	**10**	**6**

Based on the above information, answer the following questions.

(i) The upper limit of a class and lower limit of its succeeding class is differ by

(a) 9 (b) 1 (c) 10 (d) none of these

(ii) The median class is

(a) 229.5-239.5 (b) 230-239 (c) 220-229 (d) 219.5-229.5

(iii) The cumulative frequency of the class preceding the median class is

(a) 14 (b) 18 (c) 26 (d) 10

(iv) The median of the distance travelled is

(a) 222 km (b) 225 km (c) 223 km (d) none of these

(v) If the mode of the distance travelled is 223.78 km, then mean of the distance travelled by the bus is

(a) 225 km (b) 220 km (c) 230.29 km (d) 224.29 km

223) A group of 71 people visited to a museum on a certain day. The following table shows their ages.

Age (in years)	Number of persons
Less than 10	3
Less than 20	10
Less than 30	22
Less than 40	40
Less than 50	54
Less than 60	71

Based on the aboxe information, answer the following questions.

(i) If true class limits have been decided by making the classes of interval 10, then first class must be

(a) 5-15 (b) 0-10

(c) 10-20 (d) none of these

(ii) The median class for the given data will be

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

(iii) The cumulative frequency of class preceding the median class is

(a) 22 (b) 13 (c) 25 (d) 35

(iv) The median age of the persons visited the museum is

(a) 30 years (b) 32.5 years (c) 34 years (d) 37.5 years

(v) If the price of a ticket for the age group 30-40 is Rs 30, then the total amount spent by this age group is

(a) Rs 360 (b) Rs 420 (c) Rs 540 (d) Rs 340

224) An electric scooter manufacturing company wants to declare the mileage of their electric scooters. For this, they recorded the mileage (km/ charge) of 50 scooters of the same model. Details of which are given in the following table.

Mileage (km/charge)	100-120	120-140	140-160	160-180
Number of scooters	7	12	18	13

Based on the above information, answer the following questions.

(i) The average mileage is

(a) 140 krn/charge (b) 150 krn/ charge (c) 130 krn/charge (d) 144.8 krn/charge

(ii) The modal value of the given data is

(a) 150 (b) 150.91 (c) 145.6 (d) 140.9

(ill) The median value of the given data is

(a) 140 (b) 146.67 (c) 130 (d) 136.6

(iv) Assumed mean method is useful in determining the

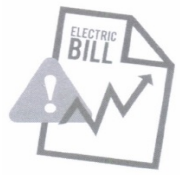
(a) Mean (b) Median (c) Mode (d) All of these

(v) The manufacturer can claim that the mileage for his scooter is

(a) 144 krn/charge (b) 155 krn/charge (c) 165 krn/charge (d) 175krn/charge

225) An inspestor in an enforcement squad of electricity department visit to a locality of 100 families and record their monthly consumption of electricity, on the basis of family members, electronic items in the house and wastage of electricity, which is summarise in the following table.

Monthly Consumption (in kwh)	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
Number of families	2	5	x	12	17	20	y	9	7	4



Based on the above information, answer the following questions.

(i) The value of x + y is

(a) 100 (b) 42 (c) 24 (d) 200

(ii) If the median of the above data is 525, then x is equal to

(a) 10 (b) 8 (c) 9 (d) none of these

(iii) What will be the upper limit of the modal class?

(a) 400 (c) 650 (b) 600 (d) 700

(iv) The average monthly consumption of a family of this locality is approximately

(a) 520 kwh (b) 522 kwh (c) 540 kwh (d) none of these

(v) If A be the assumed mean, then A is always

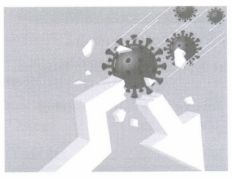
(a) > (Actual mean) (b) < (Actual Mean)

(c) = (Actual Mean) (d) can't say

226) Household income in India was drastically impacted due to the COVID-19 loekdown. Most of the companies decided to bring down the salaries of the employees by 50%.

The following table shows the salaries (in percent) received by 25 employees during loekdown.

Salaries received (in percent)	50-60	60-70	70-80	80-90
Number of employees	9	6	8	2



Based on the above information, answer the following questions.

(i) Total number of persons whose salary is reduced by more than 30%, is

(a) 10 (b) 20 (c) 25 (d) 15

(ii) Total number of persons whose salary is reduced by atmost 40%, is

(a) 15 (b) 10 (c) 16 (d) 8

(iii) The modal class is

(a) 50-60 (b) 60-70 (c) 70-80 (d) 80-90

(iv) The median class of the given data is

(a) 50-60 (b) 60-70 (c) 70-80 (d) 80-90

(v) The empirical relationship between mean, median and mode is

(a) 3 Median = Mode + 2 Mean (b) 3 Median = Mode - 2 Mean

(c) Median = 3 Mode - 2 Mean (d) Median = 3 Mode + 2 Mean

227) A bread manufacturer wants to know the lifetime of the product. For this, he tested the life time of 400 packets of bread. The following tables gives the distribution of the life time of 400 packets.

Lifetime (in hours)	**Number of packets (Cumulative frequency)**
150-200	**14**
200-250	**70**
250-300	**130**
300-350	**216**
350-400	**290**
400-450	**352**
450-500	**400**

Based on the above information, answer the following questions.

(i) If m be the class mark and b be the upper limit of a class in a continuous frequency distribution, then lower limit of the class is

(a) 2m + b (b) 2m+$\sqrt{b}$ (c) m - b (d) 2m-b

(ii) The average lifetime of a packet is

(a) 341 hrs (b) 300 hrs (c) 340 hrs (d) 301 hrs

(iii) The median lifetime of a packet is

(a) 347 hrs (b) 340 hrs (c) 346 hrs (d) 342 hrs

(iv) If empirical formula is used, then modal lifetime of a packet is

(a) 340 hrs (b) 341 hrs (c) 348 hrs (d) 349 hrs

(v) Manufacturer should claim that the lifetime of a packet is

(a) 346 hrs (b) 341 hrs (c) 340 hrs (d) 347hrs

228) A petrol pump owner wants to analyse the daily need of diesel at the pump. For this he collected the data of vehicles visited in 1 hr. The following frequency distribution table shows the classification of the number of vehicles and quantity of diesel filled in them.

Diesel Filled (in Litres)	3-5	5-7	7-9	9-11	11-13
Number of vehicles	5	10	10	7	8

Based on the above data, answer the following questions.

(i) Which of the following is correct?

(a) If x_i and f_i are sufficiently small, then direct method is appropriate choice for calculating mean.

(b) If x_i and f_i are sufficiently large, then direct method is appropriate choice for calculating mean.

(c) If x_i and f_i are sufficiently small, then assumed mean method is appropriate choice for calculating mean.

(d) None of the above.

(ii) Average diesel required for a vehicle is

(a) 8.15 litres (b) 6 litres (c) 7 litres (d) 5.5 litres

(iii) If approximately 2000 vehicles comes daily at the petrol pump, then how much litres of diesel the pump should have?

(a) 16200 litres (b) 16300 litres (c) 10600 litres (d) 15000 litres

(iv) The sum of upper and lower limit of median class is

(a) 22 (b) 10 (c) 16 (d) none of these

(v) If the median of given data is 8litres, then mode will be equal to

(a) 7.5 litres (b) 7.7 litres (c) 5.7 litres (d) 8 litres

229) A group of students decided to make a project on Statistics. They are collecting the heights (in cm) of their 51 girls of Class X-A, B and C of their school. After collecting the data, they arranged the data in the following less than cumulative frequency distribution table form:

Height (in cm)	**Number of girls**
Less than 140	4
Less than 145	11
Less than 150	29
Less than 155	40
Less than 160	46

Class intervals	**Frequency**	**Cumulative frequency**
Below 140	4	4
140 - 145	7	11
145 - 150	18	29
150 - 155	11	40
155 - 160	6	46
160 - 165	5	51

(i) What is the lower limit of median class?

(a) 145 (b) 150 (c) 155 (d) 160

(ii) What is the upper limit of modal class?

(a) 145 (b) 150 (c) 155 (d) 160

(iii) What is the mean of lower limits of median and modal class?

(a) 145 (b) 150 (c) 155 (d) 160

(iv) What is the width of the class?

(a) 10 (b) 15 (c) 5 (d) none of these

(v) The median is :

(a) 149.03 cm (b) 146.03 cm (c) 147.03 cm (d) 148.03 cm

230) Overweight and obesity may increase the risk of many health problems, including diabetes, heart disease, and certain cancers. The basic reason behind is the laziness, eating more junk foods and less physical exercise. The school management give instruction to the school to collect the weight data of each student. During medical check of 35 students from Class X- A, there weight was recorded as follows:

Weight (in kg)	**No.of students**
Less than 38	0
Less than 40	3
Less than 42	5
Less than 44	9
Less than 46	14
Less than 48	28
Less than 50	32
Less than 52	35

(i) Find the median class of the given data.

Weight (in kg)	**No.of students**	**cf**
below 38	0	0
38 - 40	3	3
40 -42	2	5
42 - 44	4	9
44 - 46	5	14
46 - 48	14	28
48 - 50	4	32
50 -52	3	35

(a) 44-46 (b) 46-48 (c) 48-50 (d) None of these

(ii) Calculate the median weight of the given data.

Weight (in kg)	**No.of students**	**cf**
below 38	0	0
38 - 40	3	3
40 -42	2	5
42 - 44	4	9
44 - 46	5	14
46 - 48	14	28
48 - 50	4	32
50 -52	3	35

(a) 46.5 (b) 47.5 (c) 46 (d) 47

(iii) Find the mean of the given data.

Weight (in kg)	**Class mark 'x'**	**f**	**fx**
38 - 40	39	3	117
40 -42	41	2	82
42 - 44	43	4	172
44 - 46	45	5	225
46 - 48	47	14	658
48 - 50	49	4	196
50 -52	51	3	153
Total		**35**	**1603**

(a) 45 (b) 45.8 (c) 46.2 (d) 46.8

(iv) Find the modal class of the given data.

Weight (in kg)	No.of students	cf
below 38	0	0
38 - 40	3	3
40 -42	2	5
42 - 44	4	9
44 - 46	5	14
46 - 48	14	28
48 - 50	4	32
50 -52	3	35

(a) 44-46 (b) 46-48 (c) 48-50 (d) 50-52

(v) While computing the mean of grouped data, we assume that the frequencies are

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

231) A group of students went to another city to collect the data of monthly consumptions (in units) to complete their Statistics project. They prepare the following frequency distribution table from the collected data gives the monthly consumers of a locality.

Monthly consumption (in units)	No.of consumers
65 - 85	4
85 - 105	5
105 - 125	13
125 - 145	20
145 - 165	14
165 - 185	8
185 - 205	4

(i) What is the lower limit of median class?

(a) 125 (b) 145 (c) 165 (d) 185

(ii) What is the lower limit of modal class?

(a) 125 (b) 145 (c) 165 (d) 185

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

(a) 125 (b) 145 (c) 165 (d) 185

(iv) What is the width of the class?

(a) 10 (b) 15 (c) 20 (d) 25

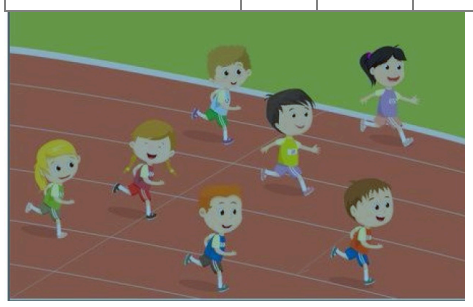
(v) The median is :

(a) 137 (b) 135 (c) 125 (d) 135.7

232) 100m RACE

A stopwatch was used to find the time that it took a group of students to run 100 m.

Time in (sec)	0-20	20-40	40-60	60-80	80-100
No.of students	8	10	13	6	3



(i) Estimate the mean time taken by a student to finish the race.

(a) 54 (b) 63 (c) 43 (d) 50

(ii) What will be the upper limit of the modal class ?

(a) 20 (b) 40 (c) 60 (d) 80

(iii) The construction of cumulative frequency table is useful in determining the

(a) Mean (b) Median (c) Mode (d) All of the above

(iv) The sum of lower limits of median class and modal class is

(a) 60 (b) 100 (c) 80 (d) 140

(v) How many students finished the race within 1 minute?

(a) 18 (b) 37 (c) 31 (d) 8

233) 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

Age(in year)	**Below 15**	**Below 25**	**Below 35**	**Below 45**	**Below 55**	**Below 65**
No. of patients	6	17	38	61	75	8

Based on the above information, answer the following questions

(a) The modal class interval is :

(i) 45-55 (ii) 35-45 (iii) 25-35 (iv) 15-25

(b) The median class interval is

(i) 45-55 (ii) 35-45 (iii) 25-35 (iv) 15-25

(c) The modal age of the patients admitted in the hospital is :

(i) 38.6 years (ii) 35.8 years (iii) 36.8 years (iv) 38.5 years

(d) Which age group was affected the most?

(i) 35-45 (ii) 25-35 (iii) 15-25 (iv) 45-55

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

(i) 61 (ii) 19 (iii) 14 (iv) 23

234) In a school, Class X B and C students appeared for Sunday Sample paper test 05 and marks obtained out of 80 are formulated in a table as follows:

Marks	**Number of students**
Less than 10	8
Less than 20	20
Less than 30	30
Less than 40	50
Less than 50	60
Less than 60	70
Less than 70	75
Less than 80	80

(a) How many students secured less than 40 marks?

(i) 50 (ii) 40 (iii) 60 (iv) 30

(b) What is the upper limit of modal class?

(i) 20 (ii) 30 (iii) 40 (iv) 50

(c) The median class is :

(i) 10-20 (ii) 20-30 (iii) 30-40 (iv) 40-50

(d) The mean marks of the students is :

(i) 35.8 (ii) 35.9 (iii) 36 (iv) 36.5

(e) Class mark of the class preceding the modal class is :

(i) 35 (ii) 30 (iii) 25 (iv) 45

235) Mr. Kumar is a Maths teacher who is working in KV Gachibowli Hyderabad. In his class X, total 80 students are there. He decided to teach them as per their capabilities. So, he conducted one revision test on the basis of class IX result. The maximum marks were 50. There were 12 students who scored less than 10 marks. Shruthi who got 3 marks was handed over a red card as an intimation to work hard for one month and show improvement, as she scored the least in the class. Anish was presented a badge of honour for scoring the highest in the class. He scored 48 marks. Best performer badge given to Anish. Mr. Kumar prepared a frequency distribution table for the data of the marks obtained by the students in the revision test as follows:

Marks	**Number of students**
0 – 10	12
10 – 20	16
20 – 30	21
30 – 40	13
40 – 50	18

(a) Find the lower limit of modal class of the frequency distribution obtained by Mr. Kumar

(i) 10 (ii) 20 (iii) 30 (iv) 40

(b) Find the median class of the distribution

(i) 10–20 (ii) 20–30 (iii) 30–40 (iv) 40–50

(c) Find the mean marks obtained by the students.

(i) 23.25 (ii) 24.25 (iii) 26.125 (iv) 31.375

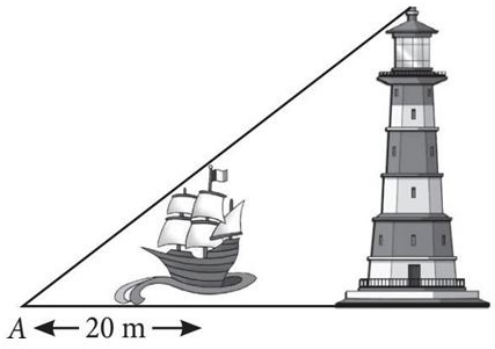
(d) Find the range of the marks obtained by the student

(i) 31 (ii) 37.25 (iii) 41.25 (iv) 45

(e) Mr. Kumar formed Section A for those who scored above 40; Section B for those who scored between 30 and 40; Section C for those who scored between 20 and 30 and Section D for those who scored below 20. How many students were there in Section D

(i) 12 (ii) 16 (iii) 28 (iv) 49

236) Shweta went to a beach with her uncle. From a point A where Shweta was standing, a ship and light house come in a straight line as shown in the figure.



(i) Which similarity criteria can be seen in this case, if ship and lighthouse are considered as straight lines?

(a) AA (b) SAS (c) SSS (d) ASA

(ii) The distance between Shweta and the ship is twice as much as the height of the ship. What is the height of the ship?

(a) 40m (b) 10 m (c) 15 m (d) 25m

(iii) If the distance of Shweta from the lighthouse is twelve times the height of the ship, then the ratio of the heights of ship and lighthouse is

(a) 3 : 1 (b) 1 : 4 (c) 1 : 6 (d) 2 : 3

(iv) What is the ratio of the distance between Shweta and top of ship to the dista nce between the tops of ship and lighthouse?

(a) 1 : 5 (b) 1 : 6 (c) 2 : 5 (d) Can't be determined

237) The COVID-19 pandemic also known as coronavirus pandemic, is an ongoing pandemicof coronavirus disease caused by the transmission of severe acute respiratory syndrome corona virus 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
Number 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
Number of cases	8	16	10	42	24	12

Refer to Table 1

(i) The average age for which maximum cases occurred is

(a) 32.24 (b) 34.36 (c) 36.82 (d) 42.24

(ii) The upper limit of modal class is

(a) 15 (b) 25 (c) 35 (d) 45

(iii) The mean of the given data is

(a) 26.2 (b) 32.4 (c) 33.5 (d) 35.4

Refer to Table 2

(iv) The mode of the given data is

(a) 41.4 (b) 48.2 (c) 55.3 (d) 64.6

(v) the median of the given data is

(a) 32.7 (b) 40.2 (c) 42.3 (d) 48.6

238) Electricity energy consumption is the form of energy consumption that uses electric energy. Global electricity consumption continues to increase faster than world population, leading to an increase in the average amount of electricity consumed per person (per capita electricity consumption).

Tariff : LT-Residential	Bill Number : 384756
Type of supply : Single Phase	Connected Load : 3kW
Meter Reading Date: 31-11-13	Meter Reading : 65789
Previous Reading date : 31-10-13	Previous Meter Reading : 65500
	Units Consumed : 289

A survey is conducted for 56 families of a Colony A. The following tables gives the weekly consumption of electricity of these families.

Weekly consumption (in units)	0-10	10-20	20-30	30-40	40-50	50-60
number of families	16	12	18	6	4	0

The similar survey is conducted for 80 families of colony B and the data is recorded as below:

Weekly consumption (in units)	0-10	10-20	20-30	30-40	40-50	50-60
Number of families	0	5	10	20	40	5

Refer to data received from Colony A

(i) The median weekly consumption is

(a) 12 units (b) 16 units (c) 20 units (d) None of these

(ii) The mean weekly consumption is

(a) 19.64 units (b) 22.5 units (c) 26 units (d) None of these

(iii) The modal class of the above data is

(a) 0-10 (b) 10-20 (c) 20-30 (d) 30-40

Refer to data received from Colony B

(iv) The modal weekly consumption is

(a) 38.2 units

(b) 43.6 units

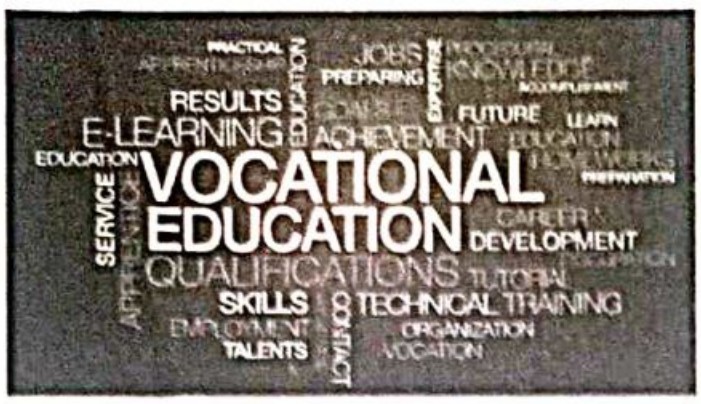
(c) 26 units

(d) 32 units

(v) The mean weekly consumption is

(a) 15.65 units (b) 32.8 units (c) 38.75 units (d) 48 units

239) Vocational training complements traditional education by providing practical skills and hands on experience. While education equips individuals with a broad knowledge base, vocational training focuses on job-specific skills, enhancing employability thus making the student self-reliant. Keeping this in view, a teacher made the following table giving the frequency distribution of students/adults undergoing vocational training from the training institute.



Age (in years)	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
Number of participants	62	132	96	37	13	11	10	4

From the above, answer the following questions.

(a) What is the lower limit of the modal class of the above data?

(b) (i) Find the median class of the above data.

Or

(ii) Find the number of participants of age less than 50 yr who undergo vocational training.

(c) Give the empirical relationship between mean, median and mode.

5 Marks 180 x 5 = 900

240) Consider the following distribution of daily wages of 50 workers of a factory:

DAILY WAGES (IN RS)	NUMBER OF WORKERS
100-120	12
120-140	14
140-160	8
160-180	6
180-200	10

Find the mean daily wages of the workers of the factory by using an appropriate method.

241) 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.

DAILY POCKET ALLOWANCE (IN RS)	NUMBER OF CHILDREN
11-13	7
13-15	6
15-17	9
17-19	13
19-21	f
21-23	5
23-25	4

242) Thirty women were examined in a hospital by a doctor and the number of heart 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 the mean heart beats per minute for these women, choosing a suitable method.

243) 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.

NUMBER OF MANGOES	50-52	53-55	56-58	59-61	62-64
NUMBER OF BOXES	15	110	135	115	25

Find the mean of mangoes kept in a packing box. Which method of finding the mean did you choose?

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

DAILY EXPENDITURE (IN RS)	100-150	150-200	200-250	250-300	300-350
NUMBER OF HOUSEHOLDS	4	5	12	2	2

Find the mean daily expenditure on food by a suitable method.

245) 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.

NUMBER OF DAYS	0-6	6-10	10-14	14-20	20-28	28-38	38-40
NUMBER OF STUDENTS	11	10	7	4	4	3	1

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

LITERACY RATE (IN %)	45-55	55-65	65-75	75-85	85-95
NUMBER OF CITIES	3	10	11	8	3

247) 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 its presented below:

CONCENTRATION OF SO_2 (IN PPM)	FREQUENCY
0.00-0.04	4
0.04-0.08	9
0.08-0.12	9
0.12-0.16	2
0.16-0.20	4
0.20-0.24	2

Find the mean concentration of SO_2 in the air.

248) The following data gives the information on the observed lifetimes (in hours) of 225 electrical components:

LIFETIMES (IN HOURS)	0-20	20-40	40-60	60-80	80-100	100-120
FFREQUENCY	10	35	52	61	38	29

Determine the modal lifetime of the components.

249) 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 mean monthly expenditure.

EXPENDITURE (IN RS)	**NUMBER OF FAMILIES**
1000-1500	24
1500-2000	40
2000-2500	33
2500-3000	28
3000-3500	30
3500-4000	22
4000-4500	16
4500-5000	7

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

NUMBER OF STUDENTS PER TEACHER	**NUMBER OF STATES/UT**
15-20	3
20-25	8
25-30	9
30-35	10
35-40	3
40-45	0
45-50	0
50-55	2

251) The given distribution shows the number of runs scored by some top batsmen of the world in one-day international cricket matches.

RUNS SCORED	**NUMBER OF BATSMEN**
3000-4000	4
4000-5000	18
5000-6000	9
6000-7000	7
7000-8000	6
8000-9000	3
9000-10000	1
10000-11000	1

Find the mode of the data.

252) A student noted the number of cars passing through a spot on a road for 100 periods each of 3 min and summarised it in the table given below:

NUMBER OF CARS	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
FREQUENCY	7	14	13	12	20	11	15	8

Find the mode of the data.

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

CLASS INTERVAL	**FREQUENCY**
0-10	5
10-20	x
20-30	20
30-40	15
40-50	y
50-60	5
Total	60

254) A life insurance agent found the following data for distribution of ages of 100 policy holders:

AGE (IN YEARS)	NUMBER OF POLICY HOLDERS
Below 20	2
Below 25	6
Below 30	24
Below 35	45
Below 40	78
Below 45	89
Below 50	92
Below 55	98
Below 60	100

Calculate the median age, if policies are given only to persons having age 18 yr onwards but less than 60 yr. Given benefits of insurance.

255) 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 :

LENGTH (IN MM)	NUMBER OF LEAVES
118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

Find the median length of the leaves.

256) The following table gives the distribution of the life time of 400 neon lamps :

LIFETIME (IN HOURS)	NUMBER OF LAMPS
1500-2000	14
2000-2500	56
2500-3000	60
3000-3500	86
3500-4000	74
4000-4500	62
4500-5000	48

Find the median lifetime of a lamp.

257) 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 LETTERS	1-4	4-7	7-10	10-13	13-16	16-19
NUMBER OF SURNAMES	6	30	40	16	4	4

Determine

(i) median number of letters in the surnames

(ii) mean number of letters in the surnames.

(iii) modal size of the surnames.

258) The distribution given below, gives the weights of 30 students of a class. Find the median weight of the students.

WEIGHT (IN KG)	40-45	45-50	50-55	55-60	60-65	65-70	70-75
NUMBER OF STUDENTS	2	3	8	6	6	3	2

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

Class Interval	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
Frequency	2	5	x	12	17	20	y	9	7	4

260) 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. Find the mean of the marks obtained by the students

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

261) The table below gives the percentage distribution of female teachers in the primary schools of rural areas of various states and union territories (U.T.) of India. Find the mean percentage of female teachers by all the three methods discussed in this section.

Percentage of female teachers	**15-25**	**25-35**	**35-45**	**45-55**	**55-65**	**65-75**	**75-85**
Number of status / U.T.	**6**	**11**	**7**	**4**	**4**	**2**	**1**

Source : Seventh All India School Education Survey conducted by NCERT

262) The distribution below shows the number of wickets taken by bowlers in one-day cricket matches. Find the mean number of wickets by choosing a suitable method. What does the mean signify?

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

263) 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. How environment awareness programme for students makes environment healthy?

Number of plants	0-2	2-4	4-6	6-8	8-10	10-12	12-14
Number of house	1	2	1	5	6	2	3

Which method did you use for finding the mean, and why?

264) Consider the following distribution of daily wages of 50 workers of a factory

Daily wages (in Rs)	500-520	520-540	540-560	560-580	580-600
Number of workers	12	14	8	6	10

Find the mean daily wages of the workers of the factory by using an appropriate method

265) The wickets taken by a bowler in 10 cricket matches are as follows:

2	**6**	**4**	**5**	**0**	**2**	**1**	**3**	**2**	**3**

Find the mode of the data.

266) A survey conducted on 20 households in a locality by a group of students resulted in the following frequency table for the number of family members in a household:

Family Size	1-3	3-5	5-7	7-9	9-11
Number of Familes	7	8	2	2	1

Find the mode of this data.

267) The marks distribution of 30 students in a mathematics examination are given in Table.

Class interval	**Number of students (f_i)**	**Class mark (x_i)**	**$f_i x_i$**
10-25	**2**	**17.5**	**35.0**
25-40	**3**	**32.5**	**97.5**
40-55	**7**	**47.5**	**332.5**
55-70	**6**	**62.5**	**375.0**
70-85	**6**	**77.5**	**465.0**
85-100	**6**	**92.5**	**555.0**
Total	$\Sigma f_i = 30$		$\Sigma f_i x_i = 1860.0$

Find the mode of this data. Also compare and interpret the mode and the mean.

268) The following table shows the ages of the patients admitted in a hospital during a year:

Age (in years)	5-15	15-25	25-35	35-45	45-55	55-65
Number of patients	6	11	21	23	14	5

Find the mode and the mean of the data given above. Compare and interpret the two measures of central tendency.

269) A survey regarding the heights (in cm) of 51 girls of Class X of a school was conducted and the following data was obtained:

Height (in cm)	**Number of girls**
Less than 140	4
Less than 145	11
Less than 150	29
Less than 155	40
Less than 160	46
Less than 165	51

Find the median height

270) The following frequency distribution gives the monthly consumption of electricity of 68 consumers of a locality. Find (i) median, (ii) mean and (iii) mode of the data and compare them. (iv) How electricity consumption can be reduced?

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

271) Find the mean of the following distribution by direct method.

CLASS INTERVAL	0-10	10-20	20-30	30-40	40-50
NUMBER OF WORKERS	7	10	15	8	10

272) Calculate the mean of the following data.

CLASS	4-7	8-11	12-15	16-19
FREQUENCY	5	4	9	10

273) Using assumed mean method find the mean of the following frequency distribution.

CLASS	63-65	66-68	69-71	72-74	75-77
FREQUENCY	4	3	7	8	3

274) 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

275) Find the mode of given data.

MARKS	0-10	10-20	20-30	30-40	40-50
FREQUENCY	20	24	40	36	20

276) Find the mode of the following data.

CLASS INTERVAL	0-9	10-19	20-29	30-39	40-49	50-59
FREQUENCY	12	15	21	17	19	6

277) On sports day of a school, agewise participation of students is shown in the following distribution:

AGE IN YEARS	5-7	7-9	9-11	11-13	13-15	15-17	17-19
NUMBER OF STUDENTS	x	15	18	30	50	48	x

Find the mode of the data. Also, find missing frequencies when sum of frequencies is 181.

278) Write frequency distribution table for the following data:

MARKS	Below 10	Below 20	Below 30	Below 40	Below 50	Below 60
NUMBER OF STUDENTS	0	15	20	30	35	40

279) The following table gives the literacy rate (in %) of 25 cities.

LITERACY RATE	50-60	60-70	70-80	80-90
NUMBER OF CITIES	9	6	8	2

Find the median class and modal class.

280) Compute the median marks for the following data.

MARKS	**NUMBER OF STUDENTS**
0 and above	50
10 and above	46
20 and above	40
30and above	20
40 and above	10
50 and above	3
60and above	0

281) If median of the following frequency distribution is 24, the find the missing frequency x.

AGE (IN YEARS)	0-10	10-20	20-30	30-40	40-50
NUMBER OF PERSONS	5	25	x	18	7

282) If median of the following distribution is 58 and the sum of all the frequencies is 140. Find the values of x and y.

VARIABLE	15-25	25-35	35-45	45-55	55-65	65-75	75-85	85-95
FREQUENCY	8	10	x	25	40	y	15	7

283) Mode and mean of a data are 12 k and 15 k respectively. Find the median of the data.

284) During Medical check up of 200 students of school, their weights were recorded as follows:

WEIGHT (IN KG)	30-39	40-49	50-59	60-69	70-79	80-89
NUMBER OF STUDENTS	5	22	63	74	30	6

Find the median weight of students.

285) If the coordinates of the point of intersection of less than ogive and more than ogive is (12.5,20) then find the value of median.

286) For the following distribution, calculate mean by using direct and assumed mean method.

CLASS INTERVAL	1-4	4-9	9-16	16-27
FREQUENCY	6	12	26	20

287) 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

288) The length of 40 leaves of a plant are measured correct upto the nearest millimetre and the data is as under.

LENGTH (IN MM)	NUMBER OF LEAVES
118-126	4
126-134	5
134-142	10
142-150	12
150-158	4
158-166	5

Find the mean and median length of the leaves.

289) Following is the cumulative frequency distribution (of less than type) of 1000 persons each of age 20 yr and above. Determine the mean age.

AGE (IN YEARS)	Below 30	Below 40	Below 50	Below 60	Below 70	Below 80
NUMBER OF PERSONS	100	220	350	750	950	1000

290) Following data was obtained regarding concentration of sulphur dioxide (SO_2) in the air (in parts per million, i.e. ppm) in 24 for a awareness programme related to environment locations of a city:

CONCENTRATION OF SO_2 (IN PPM)	FREQUECY
0.00-0.02	2
0.02-0.04	5
0.04-0.06	4
0.06-0.08	3
0.08-0.10	4
0.10-0.12	6

Find the mean and median concentration of SO_2 in the air. What value is indicated from this action?

291) A health officer took an initiative of organising a medical camp in a remote village. The medical checkup of 35 students of the age group of 10 yr and their weights were recorded as follows:

WEIGHT (IN KG)	NUMBER OF STUDENTS
38-40	3
40-42	2
42-44	4
44-46	5
46-48	14
48-50	4
50-52	3

(i) Find the mean weight of students using step deviation method.
(ii) Which value of health officer was depicted in this situation?

292) A survey was conducted to give the percentage distribution of doctors in hospitals of rural areas of various states and Union Territories (UT) of India are given in the following table:

PERCENTAGE OF DOCTORS	NUMBER OF STATES/UT
15-25	6
25-35	11
35-45	7
45-55	4
55-65	4
65-75	2
75-85	1

(i) Find the mean percentage of doctors of rural areas of various states and union territories.
(ii) Suppose there are two persons Ram and Shyam. If Ram find out the mean by direct method and Shyam find out the mean by step deviation method, then whether both of them get the same value. Explain the reason.
(iii) Give the advantages of conducting health programme.

293) The following information gives the amount of donation per anum (in RS) by some business persons to a rural sanitation programme initiated by an NGO.

AMOUNT (IN RS)	NUMBER OF PERSONS
1999.5-3499.5	35
3499.5-4999.5	37
4999.5-6499.5	29
6499.5-7999.5	12
7999.5-9499.5	5

(i) Find the mode of the above data.

(ii) What values do these persons possess?

294) A survey was conducted by a group of students regarding the number of family members (family size) in 30 families of a locality for a awareness related to population control and family planning programme. The data obtained was as follows:

FAMILY SIZE	NUMBER OF PERSONS
1-5	5
5-9	4
9-13	3
13-17	7
17-11	4
Total	23

Find the median family size for the above data. What value is indicated from the data?

295) Using step deviation method, find the mean of the following data.

CLASS INTERVAL	FREQUECY
135-140	4
140-145	9
145-150	18
150-155	28
155-160	24
160-165	10
165-170	5
170-175	2

296) An aircraft has 120 passenger 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.

297) The mean of the following distribution is 132 and sum of frequencies is 50. Find the values of x and y.

CLASS INTERVAL	0-40	40-80	80-120	120-160	160-200	200-240
FREQUENCY	4	7	x	12	y	9

298) The mode of a distribution is 55 and the modal class is 45-60 and the frequency preceding the modal class is 5 and the frequency after the modal class is 10. Find the frequency of the modal class.

299) If mode of the following data is 45, then find x and y, given $\sum f_i=50$.

CLASS INTERVAL	10-20	20-30	30-40	40-50	50-60	60-70	70-80
FREQUENCY	4	8	x	12	10	4	y

300) If the median of the following frequency distribution is 46, then find the missing frequencies.

CLASS INTERVAL	10-20	20-30	30-40	40-50	50-60	60-70	70-80	Total
FREQUENCY	12	30	?	65	?	25	18	230

301) 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 ('more than type' and less than type')

302) Find the mean, mode and median of the following data.

CLASS INTERVAL	0-10	10-20	20-30	30-40	40-50	50-60	60-70
FREQUENCY	5	10	18	30	20	12	5

303) The median of the following data is 525. Find the values of x and y.

CLASS INTERVAL	**FREQUENCY**
0-100	2
100-200	5
200-300	x
300-400	12
400-500	17
500-600	20
600-700	y
700-800	9
800-900	7
900-1000	4
Total	100

304) Find the mean, median and mode of the following frequency distribution table.

MARKS	0-10	10-20	20-30	30-40	40-50	**Total**
NUMBER OF STUDENTS	8	16	36	34	6	100

305) The median class of a frequency distribution is 125-145. The frequency and cumulative frequency of the class preceding to the median class are 20 and 22, respectively. Find the sum of the frequencies, if the median is 137.

306) Find the mean marks from the following data.

MARKS (BELOW)	10	20	30	40	50	60	70	80	90	100
NUMBER OF STUDENTS	5	9	17	29	45	60	70	78	83	85

307) Calculate the mode from the following data.

MONTHLY SALARY (IN RS)	**NUMBER OF EMPLOYEES**
Less than 5000	90
Less than 10000	240
Less than 15000	340
Less than 20000	420
Less than 25000	490
Less than 30000	500

308) Calculate the mode of the following frequency distribution table.

MARKS	**NUMBER OF STUDENTS**
25 or more than 25	52
35 or more than 35	47
45 or more than 45	37
55 or more than 55	17
65 or more than 65	8
75 or more than 75	2
85 or more than 85	0

309) Draw 'less than ogive' and 'more than ogive' for the following distribution and hence find its median.

CLASS INTERVAL	20-30	30-40	40-50	50-60	60-70	70-80	80-90
FREQUENCY	10	8	12	24	6	25	15

310) The mileage (in km/L) of 50 cars of the same model was tested by a manufacturer and details are tabulated as given below:

MILEAGE (IN KM/L)	10-12	12-14	14-16	16-18
NUMBER OF CARS	7	12	18	13

Find the mean mileage. The manufacturer claimed that the mileage of the model was 16 km/L. Do you agree with this claim?

311) Compute the median from the following data.

MID VALUE	115	125	135	145	155	165	175	185	195
FREQUENCY	6	25	48	72	116	60	38	22	3

312) The mean of the following frequency distribution is 50, but the frequencies f_1 and f_2 in classes 20-40 and 60-80 respectively are missing. Find the missing frequencies.

CLASS INTERVAL	0-20	20-40	40-60	60-80	80-100	Total
FREQUENCY	17	f_1	32	f_2	19	120

313) The following distribution gives the daily income of 50 workers of a factory:

DAILY INCOME (IN RS)	100-120	120-140	140-160	160-180	180-200
NUMBER OF WORKERS	12	14	8	6	10

Convert the distribution above to a 'less than type' cumulative frequency distribution and draw its ogive.

314) During the medical check-up 35 students of a class, their weights were recorded as follows:

WEIGHT (IN KG)	**NUMBER OF STUDENTS**
Less than 38	0
Less than 40	3
Less than 42	5
Less than 44	9
Less than 46	14
Less than 48	28
Less than 50	32
Less than 52	35

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. What are benefits of regular medical check-up?

315) Calculate the average daily income (in Rs of the following data about men working in a company:

Daily income(Rs)	< 100	< 200	< 300	< 400	< 500
Number ofmen	12	28	34	41	50

316) The following table gives the life time of 200 bulbs. Calculate the mean life time of a bulb by step deviation method:

Life time (in hours)	400-499	500-599	600-699	700-799	800-899	900-999
Number of bulbs	24	47	39	42	34	14

317) The following distribution gives the distribution of life times of washing machines of a certain company

Life time (in hours)	1000-1200	1200-1400	1400-1600	1600-1800	1800-2000	2000-2200	2200-2400
Number of washing machines	15	60	68	86	75	61	45

Convert the above distribution into 'less than type' and draw its ogive

318) Following distribution shows the marks obtained by a class of 100 students

Marks	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	10	15	30	32	8	5

Draw a 'more than' ogive for the above data.

319) Draw more than ogive for the following distributions. Find the median from the curve.

Classes	0-10	10-20	20-30	30-40	40-50
Frequency	10	18	40	20	12

320) The following distribution gives the daily income of 50 workers of a factory:

daily Income (in Rs)	200-250	250-300	300-350	350-400	400-450	450-500
Number of workers	10	5	11	8	6	10

Convert the distribution to a 'less than type' cumulative frequency distribution and draw Its ogIve. Hence obtain the median daily income.

321) raw "less than ogive" and "more than ogive" for the following distribution and hence find its median

Class	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	10	8	12	24	6	25	15

322) The following table gives the weight of 120 articles

weight in kg	0-10	10-20	20-30	30-40	40-50	50-60
Number of students	14	17	22	26	23	18

Change the distribution to a 'more than type' distribution and draw Its oglVe

323) Draw a 'more than ogive' for the following data

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	9	10	12	8	7	5	4

324) The distribution of monthly wages of 200 workers of a certain factory is as given below

Monthly wages	80-100	100-120	120-140	140-160	160-180
Number of workers	20	30	20	40	90

Change the above distribution to a 'more than type' distribution and draw its ogive

325) The following are the ages of 200 patients getting medical treatment in a hospital on a particular day:

Age (in tears)	10-20	20-30	30-40	40-50	50-60	60-70
Number of Patients	40	22	35	50	23	30

Write the above distribution as 'less than type' cumulative frequency distribution and also draw an ogive to find the median.

326) Literacy rates of 40 cities are given in the following table. If it is given that mean literacy rate is 63.5,then find the missing frequencies x and y.

Literacy rate (in %)	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90
Number of cities	1	2	3	x	y	6	8	4	2	3	2

327) On annual day of a school, 400 students participated in the function. Frequency distribution showing their ages is as shown in the following table:

Ages (in years)	05-07	07-09	09-11	11-13	13-15	15-17	17-19
Number of students	70	120	32	100	45	28	5

Find mean and median of the above data

328) (i) Find the mean of children per family from the data given blow:

Number of children	0	1	2	3	4	5
Number of families	5	11	25	12	5	2

(ii) Which mathematical concept is used in this problem?

(iii)What is its value?

329) The following table shows the age distribution of cases of a certain disease admitted during a year in a particular hospital:

Class	5-14	15-24	25-34	35-44	45-54	55-64
Frequency	6	11	21	23	14	5

(i) Find the average age for which maximum cases occured.

(ii) Which mathematical concept is used in this problem?

(iii) What is its value?

330) The table below gives the distribution of villages under different heights from sea level in a certain region:

Height (in metre)	200	600	1000	1400	1800	2200
No. of Villages	142	265	560	271	89	16

(i) Compute the mean height of the region.
(ii) Which mathematical concept is used in this problem?
(iii) What is the value of village in modern times?

331) The following distribution gives the weights of 60 students of a class. Find the mean and mode weights of the students.

Weight (in kg)	40-44	44-48	48-52	52-56	56-60	60-64	64-68	68-72
Number of students	4	6	10	14	10	8	6	2

332) Find the mode of the following frequency distribution:

Class Interval	f
25-35	7
35-45	31
45-55	33
55-65	17
65-75	11
75-85	1

333) On the sports day of a school, 300 students participated. Their ages are given in the following distribution:

Age (in years)	5-7	7-9	9-11	11-13	13-15	15-17	17-19
Number of students	67	33	41	95	36	13	15

Find the mean and mode of the data.

334) Monthly expenditures of milk in 100 families of a housing society are given in the following frequency distribution:

Monthly Expenditure	0-175	175-350	350-525	525-700	700-875	875-1050	1050-1225
Number of families	10	14	15	21	25	7	5

Find the mode and median for this distribution

335) The following table shows the marks obtained by 100 students of class X in a school during a particular academic session. Find the mode of this distribution

Marks	Less than 10	Less than 20	Less than 30	Less than 40	Less than 50	Less than 60	Less than 70	Less than 80
Number of students	7	21	34	46	66	77	92	100

336) Find the median of the following data

Profit (in lakh of rupee)	Number of shops
More than or equal to 5	30
More than or equal to 10	28
More than or equal to 15	16
More than or equal to 20	14
More than or equal to 25	10
More than or equal to 30	7
More than or equal to 35	3

337) The following table gives the daily income of 50 workers f a factory

Daily income (in Rs)	100-120	120-140	140-160	160-180	180-200
Number of workers	12	14	8	6	10

Find the mean, mode and median of the above data .

338) The mean of a set of numbers is $\bar{x}$. If each number is multiplied by k, then find the mean of the new set.

339) If d1 = x_1 - A, $\sum_{i=1}^{n} f_i = 25$, A = 250, $\bar{x}$ = 250, then find the value of $\sum_{i=1}^{n} f_i d_1$.

340) If mean of 1,2,3, ... n is $\frac{16n}{11}$, then find the value of n.

341) If the class mark of a continuous frequency distribution are 12, 14, 16, 18, ... then find the class intervals corresponding to the class marks 16 and 22.

342) Find the combined mean of a group of 150, if the mean of 50 students is 40 and that of other 100 students is 50.

343) The average height of 30 students is 150 cm. It was detected later that one value of 165 cm was wrongly copied as 135 cm for the computation of mean. Find the correct mean.

344) The average marks of A, B and C is 33, while the average marks of B, C and D is 37. If A obtains 30 marks, find the marks obtained by D.

345) The average weight of A, B, C is 45 kg. If the average weight of A and B be 40 kg. and that of B and C be 43 kg, find the weight of B.

346) Compare the modal ages of two groups of students A and B appearing for an entrance test:

AGE(IN YEARS)	**NUMBER OF STUDENTS IN**	
	GROUP A	**GROUP B**
16 - 18	50	54
18 - 20	78	89
20 - 22	46	40
22 - 24	28	25
24 - 26	23	17

347) Find the value of p from the following data if its mode is 48.

CLASS	**FREQUENCY**
0 - 10	7
10 - 20	14
20 - 30	13
30 - 40	12
40 - 50	p
50 - 60	18
60 - 70	15
70 - 80	8

348) Find the unknown entries a, b, c, d, e and f in the following and hence find their mode.

Height (in cm)	150-155	155 - 160	160 - 165	165 - 170	170-175	175-180	Total
Frequency	12	b	10	d	e	2	50
Cumulative Frequency	9	25	c	43	48	f	

349)

MARKS	**NO. OF STUDENTS (FREQUENCY)**	**C.F.**
0-10	5	5
10-30	15	F
30-60	f	50
60-80	8	58
80-90	2	60
	N=60	N=$\sum f_i$ =60

Find f and F.

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

Marks	Below 10	Below 20	Below 30	Below 40	Below 50	Below 60	Below 70	Below 80	Below 90	Below 100
No. of students	10	50	130	270	440	570	670	740	780	800

Construct a frequency distribution table for the data above.

351) Calculate the median for the following data:

Classes	20-40	40-60	60-80	80- 100	100- 120	120-140	140-160
Frequency	12	18	23	15	12	12	8

352) Find the missing frequencies f_1 ,f_2 and f_3 in the following frequency distribution when it is given that f_2:f_3=4:3, and mean=50

CLASS INTERVAL	**FREQUENCY**
0-20	17
20-40	f_1
40-60	f_2
60-80	f_3
80-100	19
Total	**120**

353) The widths of 50 leaves of a plant were measured in mm and their cumulative frequency distribution is shown
the following table. Make frequency distribution table for this.

Width in (nm)	≥ 20	≥ 30	≥ 40	≥ 50	≥ 60	≥ 70	≥ 80
Cumulative frequency	50	44	28	20	15	7	0

354) Draw 'less than ogive' and 'more than ogive' for the following distribution and hence find its median.

Class	20 -30	30-40	40-50	50-60	60 -70	70-80	80-90
Frequency	8	12	24	6	10	15	25

355) The mean and median of same data are 24 and 26 respectively. Find mode of same data.

356) Find the value of f_1 from the following data, if its mode is 65:

CIass	**Frequency**
0 - 20	
20 - 40	6
40 - 60	f_1
60 - 80	72
80 - 100	6
100 - 120	5

Where frequency 6, 8, f_1 and 12 are in ascending order.

357) Find the missing frequencies and the median for the following distribution if the mean is 1.46.

No.of accidents	Frequency (No.of days)
0	46
1	x
2	y
3	25
4	10
5	5
Total	200

358) An incomplete distribution is given below:

VARIABLE	FREQUENCY
10 -20	12
20-30	30
30-40	x
40-50	65
50-60	y
60-70	25
70-80	18

You are given that the median value is 46 and the total number of items is 230.
(i) Using the median formula and fill up missing frequencies.
(ii) Calculate the A.M. of the completed distribution

359) During the medical check-up of 35 students of a class their weights were recorded as follows:

WEIGHT(IN KG)	NUMBER OF STUDENTS
38-40	3
40-42	2
42-44	4
44-46	5
46-48	14
48-50	4
50-52	3

Draw a less than type and a more than type give from the given data. Hence obtain the median weight from the graph

360) Draw a less than type ogive of the following distribution:

MARKS	NO. OF STUDENTS
0-10	5
10-20	4
20-30	8
30-40	10
40-50	15
50-60	18

Find median from graph

361) The following table gives production yield per hectare of wheat of 100 farms of a village.

Production yield (in kg/ha)	50-55	55-60	60-65	70-75	75-80	80-85
Number of farms	2	8	12	24	38	16

Change the distribution to a more than type distribution, and draw its ogive.

362) The annual profits earned by 30 shops of a shopping complex in a locality give rise to the following distribution :

Profit (Rs in lakhs)	Number of shops (frequency)
More than or equal to 5	30
More than or equal to 10	28
More than or equal to 15	16
More than or equal to 20	14
More than or equal to 25	10
More than or equal to 30	7
More than or equal to 35	3

Draw both ogives for the data above.Hence obtain the median profit.

363) Find the mean of the following data by direct method.

CLASS	25-35	35-45	45-55	55-65	65-75
NUMBER OF WORKERS	6	10	8	12	14

364) The table below shows the daily expenditure on food of 50 households in a locality.

DAILY EXPENDITURE (IN RS)	0-100	100-200	200-300	300-400	400-500
NUMBER OF WORKERS	6	9	15	12	8

365) Find the meat. of following data by direct method.

CLASS	7.5-12.5	12.5-17.5	17.5-22.5	22.5-27.5	27.5-32.5
FREQUENCY	5	10	7	8	2

366) Find the mean of the following frequency distribution:

CLASS	0-20	20-40	40-60	60-80	80-100
FREQUENCY	17	28	32	24	19

367) Find the mean of the following frequency distribution by assumed mean method.

CLASS	25-30	30-35	35-40	40-45	45-50	50-55	55-60
FREQUENCY	14	22	16	6	5	3	4

368) The data on number of patients attending a hospital in a month are given below. Find the average number of patients attending the hospital. (Use assumed mean method)

NUMBER OF PATIENTS	0-10	10-20	20-30	30-40	40-50	50-60	60-70
NUMBER OF DAYS	4	4	7	20	12	8	5

369) Find the mean of the following data by assumed mean method

CLASS	100-120	120-140	140-160-	160-180	180-200
FREQUENCY	10	20	30	15	5

370) Find the mean of the following data by using step deviation method,

CLASS	0-20	20-40	40-60	60-80	80-100
FREQUENCY	17	28	32	24	19

371) Monthly pocket money of students of a class is given in the following frequency distribution

POCKET MONEY (IN RS)	100-125	125-150	150-175	175-200	200-225
NUMBER OF STUDENTSL	14	8	12	5	11

372) Calculate the mean of the following distribution

CLASS	10-30	30-50	50-70	70-90	90-110
FREQUENCY	15	18	25	10	2

373) Find the mean of the following distribution

CLASS	50-75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300
FREQUENCY	5	6	3	4	3	7	5	4	8	5

374) The following table represents the number of illiterate females in the age group (10-34) in a town:

AGE GROUP	10-14	15-19	20-24	25-29	30-34
NUMBER OF FEMALES	300	980	800	580	290

375) If the mean of given data is 50, find the value of p.

CLASS INTERVAL	0-20	20-40	40-60	60-80	80-100
FREQUENCY	17	28	32	p	19

376) Find the missing frequency for the given frequency distribution table, if the mean of the distribution is 18.

CLASS INTERVAL	11-13	13-15	15-17	17-19	19-21	21-23	23-25
FREQUENCY	3	6	9	13	f	5	4

377) If the mean of the following distribution is 27, then find the value of p.

CLASS INTERVAL	0-10	10-20	20-30	30-40	40-50
FREQUENCY	8	p	12	13	10

378) Find 'p' if mean of the following data is 15. 45

CLASS	0-6	6-12	12-18	18-24	24-30
FREQUENCY	6	8	p	g	7

379) If the mean of the distribution is 33.2 and the sum of all frequencies is 100. Find the missing frequencies f_1 and f_2.

CLASS	6-14	14-22	22-30	30-38	38-46	46-54	54-62	62-70
FREQUENCY	11	21	f_1	15	14	8	f_2	6

380) Find the mode of the given data.

MARKS	0-20	20-40	40-60	60-80
FREQUENCY	15	6	18	10

381) For the following data. find the mode.

CLASS	1-3	3-5	5-7	7-9	9-11
FREQUENCY	14	16	4	4	2

382) Find the mode of the given data

MARKS	0-10	10-20	20-30	30-40	40-50
FREQUENCY	20	24	40	36	20

383) Find the mode of the following frequency distribution:

CLASS	10-14	14-18	18-22	22-26	26-30	30-34	34-38
FREQUENCY	8	6	11	20	25	22	10

384) The following table shows the age distribution of cases of a certain disease admitted during a year in a particular hospital:

AGE (IN YRS)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
NUMBER OF CASES	5	8	7	12	28	20	10	10

Find the average age for which maximum cases occurred.

385) The weight of coffee in 70 packets are shown in the following table

WEIGHT (IN G)	200-201	201-202	202-203	203-204	204-205	205-206
NUMBER OF POCKETS	12	26	20	9	2	1

Determine the modal weight.

386) Find the missing frequency f for the following data. if the mode for the following data is 39.

CLASS	5-15	15-25	25-35	35-45	45-55	55-65	65-75
FREQUENCY	2	3	f	7	4	2	2

387) Monthly consumption of electricity of some consumers is given below as a distribution. Find the missing frequency (x) , if mode of distribution is given to be 200 units

MONTHLY CONSUMPTION (IN UNITS)	90-120	120-150	150-180	180-210	210-240
NUMBER OF CONSUMERS	20	15	x	75	50

388) Some surnames were picked up from a local telephone directory and the frequency distribution of the number of letters of the English alphabets was obtained as follows:

NUMBER OF LETTERS	1-4	4-7	7-10	10-13	13-16	16-19
NUMBER OF SURNAMES	10	25	35	x	12	8

389) Find the mode of the following data

CLASS INTERVAL	1-10	10-20	20-30	30-40	40-50	50-60
FREQUENCY	12	15	21	17	19	6

390) Given below is the frequency distribution of the heights of players in a school.

HEIGHT (IN CM)	160-163	164-167	168-171	172-175	176-179	180-183
NUMBER OF STUDENTS	18	116	142	129	80	15

Determine the modal height