Measures of Central Tendency

1.Following are the marks obtained by 10 students in Statistics.

75, 79, 80, 81, 84, 85, 88, 90, 92, 95

Calculate mean marks of these 10 students.

2.Arithmetic mean of 98 items is 50. Two items 60 and 70 were left out at the time of calculations. What is the correct mean of all the items?

3.Calculate arithmetic mean for the following frequency distribution.

X	5	10	15	20	25
f	2	4	7	3	1

4.From the following data find the missing items, if the mean of the distribution is 115.86

Item	110	112	113	117	-	125	128	130
No. of hours	25	17	13	15	14	8	6	2

5.Calculate arithmetic mean for the following data.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	4	6	10	20	10

6.From the following data compute the mean marks of all the students of 50 schools in a city.

Marks obtained	10-15	15-20	20-25	25-30	30-35	35-40
No. of schools	4	5	9	15	10	7
Average no. of students in a school	100	150	200	300	250	200

7.The following data given the weekly wages of the worker in a firm. Calculate the average weekly wage per worker

Wages group (Rs.)	80-100	100-120	120-140	140-160	160-180	180-200
Total hours	168	170	225	272	126	91
Average no. of hours worked per worker	12	10	9	8.5	7	6.5

8.Find the median of the following set of observations.

i. 60, 70, 50, 80, 90, 100, 110
ii. 70, 80, 60, 90, 120, 140

9. Find the median of the pop quiz marks shown below:

Marks	0	1	2	3	4	5
Frequency	1	1	5	3	2	1

10. The following is the income distribution of the persons:

Income (00 Rs.)	50-80	80-100	100-110	110-120	120-130	130-150	150-180	180-200
No. of persons	30	127	140	240	176	135	20	3

Find the median incomes.

11. Find the median wage of a labor from the following table

Wages (Rs.)	Above 0	Above 10	Above 20	Above 30	Above 40	Above 50	Above 60	Above 70
No. of labors	650	500	425	375	300	275	250	100

(Ans: M_d =Rs 36.67)

12. The expenditure of 1000 families is given as below:

Expenditure (Rs.)	40-59	60-79	80-99	100-119	120-139
No. of families	50	-	500	-	50

The median for the distribution is Rs 87. Calculate the missing frequencies.

(Ans: 263, 137)

13. Find lower and upper quartiles from the given data.

20, 18, 15, 16, 19, 25, 12, 14, 22

14. Find first and third quartiles from the given data.

X	1	2	3	4	5	6	7
f	2	5	7	10	4	3	2

15. Draw less than ogive from the following data and hence locate median, first quartile, seventh decile, and 30^{th} percentile.

0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
2	3	6	10	12	15	10	6	4

16. From the following table showing the marks distribution in a certain class, determine:

a) Limits of the marks for the middle 50% of students.
b) The lowest marks obtained by top 40% students.
c) The minimum pass marks if 40% students failed the exam.

Marks	0-20	20-40	40-60	60-80	80-100
Students	12	18	36	24	10

17. Compute mode from the following distribution.

X	50	100	150	200	250	300	350	400
f	5	14	40	91	150	87	60	38

18. Calculate the modal size in the following distribution:

Size (inches)	Below 10	10-12	12-14	14-16	16-18	18-20
Demand	3	15	27	20	3	2

Will the median fall under the same size?