WORKSHEET 1

CHAPTER 16 – STATISTICS

1. Find the median for the following frequency distribution.

Class interval	0–8	8–16	16–24	24–32	32–40	40–48
Frequency	8	10	16	24	15	7

2. Given below is the distribution of cases of a certain disease admitted during a year in a particular hospital.

Age (in years)	6–15	16–25	26–35	36–45	46–55	56–65
Number of cases	6	11	21	23	14	5

Find the average age for which maximum cases occurred.

3. Consider the following frequency distribution.

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

Find
(*i*) Mean (*ii*) Mode (*iii*) Median.

4. Using the assumed mean method, find the mean of the following data:

Class interval	0–10	10–20	20–30	30–40	40–50
Frequency	7	8	12	13	10

5. 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

6. Compute the median for each of the following data.

Marks	*No. of students*
Less than 10	0
Less than 30	10
Less than 50	25
Less than 70	43
Less than 90	65
Less than 110	87
Less than 130	96
Less than 150	100

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

7. Calculate the value of mode for the following frequency distribution:

Class	1–4	5–8	9–12	13–16	17–20	21–24	25–28	29–32	33–36	37–40
Frequency	2	5	8	9	12	14	14	15	11	13

8. Find the mean of each of the following frequency distribution.

(*i*)

Class interval	0–6	6–12	12–18	18–24	24–30
Frequency	6	8	10	9	7

(*ii*)

Size of item	0–10	10–20	20–30	30–40	40–50
Frequency	9	12	15	10	14

9. The following is the distribution of height of students of a certain class in a certain city:

Height (in cms)	160–162	163–165	166–168	169–171	172–174
No. of students	15	118	142	127	18

Find the average height of maximum number of students.

10. 100 surnames were randomly picked up from a local telephone directly 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

Find (*i*) Median number of letters in the surnames.
(*ii*) Mean number of letters in the surnames.
(*iii*) Modal size of the surnames.

11. The table below gives the distribution of villages under different heights from sea level in a certain region. Compute the mean height of the region by step deviation method.

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

12. The mean of the following frequency table is 50. But the frequencies f_1 and f_2 in class 20 – 40 and 60 – 80 are missing. Find the missing frequencies.

Class	0–20	20–40	40–60	60–80	80–100	Total
Frequency	17	f_1	32	f_2	19	120

13. If the median of the following frequency distribution is 46, find the missing frequencies:

Variable	10–20	20–30	30–40	40–50	50–60	60–70	70–80	Total
Frequency	12	30	f_1	65	f_2	25	18	229

14. Calculate the mode from the following data:

Monthly salary (in ₹)	*No. of Employees*
0–5000	90
5000–10000	150
10000–15000	100
15000–20000	80
20000–25000	70
25000–30000	10

15. Compute the median of the following data:

Marks	*No. of students*
More than 150	0
More than 140	12
More than 130	27
More than 120	60
More than 110	105
More than 100	124
More than 90	141
More than 80	150

16. The frequency distribution of scores obtained by 230 candidates in a medical entrance test is as follows:

Scores	400–450	450–500	500–550	550–600	600–650	650–700	700–750	750–800
No. of candidates	20	35	40	32	24	27	18	24

Draw ogive curves by less than and more than method on the same axes.

17. Following is the age distribution of a group of students. Draw the ogive curve of less than type and hence obtain the median value.

Age (in years)	*Frequency*
4–5	36
5–6	42
6–7	52
7–8	60
8–9	68
9–10	84
10–11	96
11–12	82
12–13	66
13–14	48
14–15	50
15–16	16

18. For the following frequency distribution, draw ogive curve of more than type and hence obtain the median value.

Class interval	0–10	10–20	20–30	30–40	40–50	50–60	60–70
Frequency	5	15	20	23	17	11	9

19. During the medical checkup of 35 students of a class, their weights were recorded as follows:

Weight (in kg)	38–40	40–42	42–44	44–46	46–48	48–50	50–52
No. of students	3	2	4	5	14	4	3

Draw a less than type and a more than type ogive curves from the given data. Hence, obtain the median weight from the graph.

20. The following table gives the daily income of 50 workers of a factory:

Daily income (in ₹)	100–120	120–140	140–160	160–180	180–200
No. of workers	12	14	8	6	10

Find

(*i*) Mean (*ii*) Mode (*iii*) Median.

ANSWERS

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1. 26
2. 37.32 years.
3. (*i*) 26.4 (*ii*) 28.8 (*iii*) 27.2
4. 27.2
5. $p = 11$
6. 76.36
7. 24.5
8. (*i*) 15.45 (*ii*) 26.33
9. 167.35
10. (*i*) 8.05 (*ii*) 8.32 (*iii*) 7.88
11. 984.51
12. $f_1 = 28$ and $f_2 = 24$
13. $f_1 = 34$ and $f_2 = 45$
14. ₹ 7727.27
15. 116.67
16. Less than ogive curve is drawn by plotting the points (450, 20), (500, 55), (550, 95), (600, 127), (650, 151), (700, 178), (750, 196), (800, 230) and joining them with a free hand smooth curve.

    More than ogive curve is drawn by plotting the points (400, 230), (450, 210), (500, 175), (550, 135), (600, 103), (650, 79), (700, 61), (750, 27) and joining them with a free hand smooth curve.
17. Ogive curve is drawn by plotting the points (5, 36), (6, 78), (7, 130), (8, 190), (9, 258), (10, 342),(11, 438), (12, 520), (13, 586), (14, 634), (15, 684), (16, 700).

    Median is 10.
18. Ogive curve is drawn by plotting the points (60, 9), (50, 20), (40, 37), (30, 60), (20, 80), (10, 95), (0, 100) and joining them with a free hand smooth curve.

    Median = 35
19. Less than type ogive is drawn by plotting the points (40, 3), (42, 5), (44, 9), (46, 14), (48, 28), (50, 32), (52, 35) and joining them with a free hand smooth curve.

    More than type ogive is draw by plotting the points (38, 35), (40, 32), (42, 30), (44, 26), (46, 21), (48, 7), (56, 3) and joining them with a free hand smooth curve.

    Median is 46.5 kg.
20. (*i*) 145.20 (*ii*) 125 (*iii*) 138.57