# Ch-13 Statistics

1. The percentage marks obtained by 100 students in an examination are given below. Find median.

| **Marks** | 30 – 35 | 35 – 40 | 40 – 45 | 45 – 50 | 50 – 55 | 55 – 60 | 60 – 65 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 10 | 16 | 18 | 23 | 18 | 8 | 7 |

2. The median of the following frequency distribution is 35. Find the value of x. Also, find the modal class.

| **C.I.** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 2 | 3 | x | 6 | 5 | 3 | 2 |

3. The mean of the following distribution is 18. Find f.

| **Class Interval** | 11 – 13 | 13 – 15 | 15 – 17 | 17 – 19 | 19 – 21 | 21 – 23 | 23 – 25 |
|---|---|---|---|---|---|---|---|
| **Frequencies** | 3 | 6 | 9 | 13 | f | 5 | 4 |

4. The percentage of marks obtained by 100 students in an examination are given below. Find the median of the given data.

| **Marks** | 30 – 35 | 35 – 40 | 40 – 45 | 45 – 50 | 50 – 55 | 55 – 60 | 60 – 65 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 14 | 16 | 18 | 23 | 18 | 8 | 3 |

5. Find the mean, median and the mode of the following frequency distribution.

| **Class** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 4 | 5 | 7 | 10 | 12 | 8 | 4 |

6. Find the mean of the following.

| **Class** | 200 – 201 | 201 – 202 | 202 – 203 | 203 – 204 | 204 – 205 | 205 – 206 |
|---|---|---|---|---|---|---|
| **Frequency** | 13 | 27 | 18 | 10 | 1 | 1 |

7. Find the mean of the following data.

| **Class** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 |
|---|---|---|---|---|---|
| **Frequency** | 20 | 24 | 40 | 36 | 20 |

8. Write the empirical relation between mean, mode and median.
9. Write the median class of the following distribution.

| **Class** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 4 | 4 | 8 | 10 | 12 | 8 | 4 |

10. What is the modal class of the following distribution.

| **Age (in Years)** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 |
|---|---|---|---|---|---|---|
| **Number of Patients** | 16 | 13 | 6 | 11 | 27 | 18 |

11. Find the median.

| **Marks** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 |
|---|---|---|---|---|---|---|
| **Frequency** | 8 | 10 | 12 | 22 | 30 | 18 |

12. Find the class marks of classes 10 – 25 and 35 – 55.
13. What is the median class of the grouped data.

| **Class** | 128 – 135 | 135 – 142 | 142 – 149 | 149 – 156 | 156 – 163 | 163 – 170 |
|---|---|---|---|---|---|---|
| **Frequency** | 8 | 5 | 9 | 12 | 5 | 1 |

14. Find the missing frequencies when the mean of the data is 53.

| **Age (in years)** | 0 – 20 | 20 – 40 | 40 – 60 | 60 – 80 | 80 – 100 | **Total** |
|---|---|---|---|---|---|---|
| **Number of People** | 15 | $f_1$ | 21 | $f_2$ | 17 | **100** |

15. The following table gives production yield per hectare of wheat of 100 farms of a village. Change the distribution to a more than type distribution.

| **Production Yield** | 40 – 45 | 45 – 50 | 50 – 55 | 55 – 60 | 60 – 65 | 65 – 70 |
|---|---|---|---|---|---|---|
| **Number of Farms** | 4 | 6 | 16 | 20 | 30 | 24 |

16. The distribution below gives the weights of 30 students of a class. Find the mean and median weight of students.

| **Weights (in kgs)** | 40 – 45 | 45 – 50 | 50 – 55 | 55 – 60 | 60 – 65 | 65 – 70 | 70 – 75 |
|---|---|---|---|---|---|---|---|
| **Number of Students** | 2 | 3 | 8 | 6 | 6 | 3 | 2 |

17. The lengths of 40 leaves of a plant are measured correct up to the nearest millimetre and the data is as under. Find the mean and median length of the leaves.

| **Length (in mm)** | 118 – 126 | 126 – 134 | 134 – 142 | 142 – 150 | 150 – 158 | 158 – 166 |
|---|---|---|---|---|---|---|
| **Number of Leaves** | 4 | 5 | 10 | 12 | 4 | 5 |

18. Find the median of the following distribution.

| **Class Interval** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 4 | 4 | 7 | 10 | 12 | 8 | 5 |

19. Find the mean of the following data.

| **Class** | 0 – 50 | 50 – 100 | 100 – 150 | 150 – 200 | 200 – 250 |
|---|---|---|---|---|---|
| **Frequency** | 15 | 20 | 35 | 20 | 10 |

20. The mean of a distribution is 50. Determine value of ‘g’.

| **Class** | 0 – 20 | 20 – 40 | 40 – 60 | 60 – 80 | 80 – 100 |
|---|---|---|---|---|---|
| **Frequency** | 17 | g | 32 | 24 | 19 |

21. Find the median of the following data.

| **Class Interval** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 |
|---|---|---|---|---|---|---|
| **Frequency** | 5 | 8 | 23 | 17 | 7 | 8 |

22. Find value of ‘q’ when mean is 47.

| **Class** | 0 – 20 | 20 – 40 | 40 – 60 | 60 – 80 | 80 – 100 |
|---|---|---|---|---|---|
| **Frequency** | 8 | 15 | 20 | q | 5 |

23. The following table shows the ages of staff members in an office. Find the mean and the mode.

| **Age (in Years)** | 18 – 27 | 27 – 36 | 36 – 45 | 45 – 54 | 54 – 63 |
|---|---|---|---|---|---|
| **Number of Members** | 6 | 11 | 21 | 23 | 14 |

24. Find the mean, mode and median of the following data.

| **Class** | 0 – 20 | 20 – 40 | 40 – 60 | 60 – 80 | 80 – 100 | 100 – 120 | 120 – 140 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 12 | 13 | 6 | 7 | 8 | 14 | 13 |

25. The median of the following data is 52.5. Find the values of x and y if the final cumulative frequency is 100.

| **Class** | 0 – 10 | 10 – 20 | 20 – 30 | 30 – 40 | 40 – 50 | 50 – 60 | 60 – 70 | 70 – 80 | 80 – 90 | 90 – 100 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Frequency** | 5 | 2 | x | 12 | 20 | 17 | y | 7 | 9 | 4 |