Chapter – 15

STATISTICS

01. Find the mean deviation from the mean for the following data.

6, 5, 5.25, 5.55, 4.75, 4.5, 6.25, 7.75, 9

02. Calculate the mean deviation from the mean of the following distribution.

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of students	05	08	15	16	06

03. Find the mean deviation from the mean for the following data.

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	06	14	16	04	02

04. Calculate the mean deviation from the mean of the following distribution.

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of students	05	08	15	16	06

05. Find the mean deviation from the mean for the following data

x_1	10	30	50	70	90
f_1	04	24	28	16	08

06. The scores of a batsman in 10 innings are 48, 80, 58, 44, 52, 65, 73, 56, 64, 54. Find the mean deviation from the median.

07. Find the mean deviation about the median for the following data.

x_1	3	6	9	12	13	15	21	22
f_1	3	4	5	2	4	5	4	3

08. Calculate the mean deviation from the mean of the following distribution.

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of students	05	08	15	16	06

09. Calculate the mean deviation from the median for the given data

Class	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	05	10	20	05	10

10. The marks obtained by 7 students are 8, 9, 11, 13, 14, 15, 21. Find the variance and standard deviation of these marks.

11. Find the variance of the data 6, 5, 9, 13, 12, 8, and 10.

12. Find the mean, variance, and standard deviation for the following.

x_1	4	6	11	17	20	24	32
f_1	3	5	9	5	4	3	1

13. Calculate the mean, variance, and standard deviation for the following distribution.

Class	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	35 – 40	40 – 45
Frequency	20	24	32	28	20	11	26	15	24

14. The following table shows the marks obtained by 100 candidates in an examination. Calculate the mean and standard deviation.

Marks	1 – 10	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60
Number of candidates	03	16	26	31	16	8

15. The mean and standard deviation of marks obtained by 50 students of a class in three subjects, mathematics, physics, and chemistry are given below.

Subject	Mathematics	Physics	Chemistry
Mean	42	32	40.9
Standard deviation	12	15	20

Which of these three subjects shows the highest variability in marks and which shows the lowest?

16. The coefficient of variation of two distributions is 60 and 70 and their standard deviations are 21 and 16, respectively. What is their arithmetic means?

17. The scores of two golfers for 10 rounds each are as follows.

A	58	59	60	54	65	66	52	75	69	52
B	84	56	92	65	86	78	44	54	78	68

Which may be regarded as a more consistent player?

18. Find the coefficient of variation of the following data

Size (in cm)	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	35 – 40
No of items	02	08	20	35	20	15

19. If $\bar{x}$ is the mean and σ^2 is the variance of n observation $x_1, x_2, x_3, \ldots\ldots\ldots, x_n$ then prove that the mean and variance of the observations $ax_1, ax_2, \ldots\ldots\ldots ax_n$ are $a\bar{x}$ and $a^2\sigma^2$, respectively (where, $a \neq 0$).

20. The mean and standard deviation of 6 observations are 8 and 4, respectively. If each observation is multiplied by 3, find the new mean and new standard deviation of the resulting observations.

21. The mean and standard deviation of a group of 100 observations were found to be 20 and 3, respectively. Later on, it was found that three observations were incorrect, which are recorded by 21, 21, and 18. Find the mean and standard deviation, if the incorrect observations are omitted.

22. The AM and SD of 100 items were recorded as 40 and 5.1 respectively. Later on, it was discovered that one observation 40 was wrongly copied down as 50. Find the correct SD.