CLASS XI – MATHEMATICS (041)
CHAPTER 13 : STATISTICS
PRACTICE PAPER (SESSION 2026–27)

Maximum Marks: 40 **Time Allowed: 1½ Hours**

General Instructions:

Read the following instructions very carefully and strictly follow them:

1. This question paper contains 23 questions. All questions are compulsory.
2. This question paper is divided into five Sections – A, B, C, D and E.
3. In Section A, Questions 1 to 12 are Multiple Choice Questions (MCQs) and Questions 13 and 14 are Assertion–Reason based questions of 1 mark each.
4. In Section B, Questions 15 to 18 are Very Short Answer (VSA) type questions, carrying 2 marks each.
5. In Section C, Questions 19 to 21 are Short Answer (SA) type questions, carrying 3 marks each.
6. In Section D, Question 22 is a Long Answer (LA) type question, carrying 5 marks.
7. In Section E, Question 23 is a case study based question, carrying 4 marks.
8. There is no overall choice. However, an internal choice has been provided in 2 questions of Section B (Q17, Q18), 2 questions of Section C (Q20, Q21), in Q22 of Section D and in one sub-part of Q23 of Section E.
9. Draw neat and clean figures wherever required. Use of calculators is not allowed.

SECTION – A **(14 × 1 = 14)**

This section comprises of 12 multiple choice questions (Q1–Q12) and 2 assertion–reason based questions (Q13–Q14) of 1 mark each.

No.	Questions	Marks

Q1. The dot plot in Fig. 1 shows the number of runs scored by a player in eight matches. The range of the data is **1**

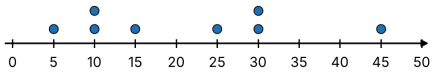


Fig. 1

(A) 35 (B) 45

(C) 40 (D) 50

Q2. Fig. 2 shows the dot plots of two sets of observations, P and Q, drawn on the same scale. Which of the following is correct? **1**

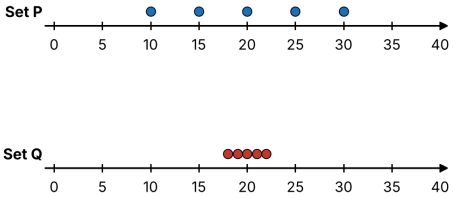


Fig. 2

(A) P and Q have the same variance

(B) The range of Q is greater than the range of P

(C) The mean of P is greater than the mean of Q

(D) P and Q have the same mean but the standard deviation of P is greater

Q3. The mean deviation about the mean of the data 3, 5, 7, 9, 11 is **1**

(A) 2.4 (B) 2

(C) 2.8 (D) 3

Q4. The variance of the data 2, 4, 6, 8, 10 is **1**

(A) 6 (B) 8

(C) 10 (D) 40

Q5. The variance of 15 observations is 6. If each observation is multiplied by 2, the variance of the new observations is **1**

(A) 12 (B) 18

(C) 24 (D) 36

Q6. The mean and standard deviation of a set of observations are 12 and 3. Each observation is multiplied by 2 and then 5 is added. The new mean and the new standard deviation are respectively **1**

(A) 29 and 6 (B) 29 and 3

(C) 24 and 6 (D) 24 and 12

Q7. For 10 observations, $\Sigma(x_i - \bar{x})^2 = 360$. The standard deviation is **1**

(A) 3.6 (B) 18

(C) 36 (D) 6

Q8. Fig. 3 shows the bar chart of a discrete frequency distribution of marks. The mean of the distribution is **1**

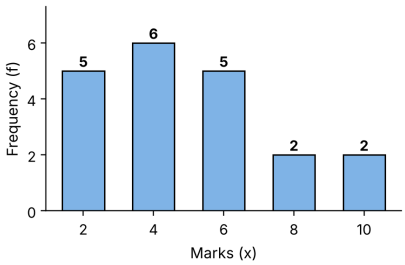


Fig. 3

(A) 4.5 (B) 5

(C) 5.5 (D) 6

Q9. The mean deviation about the median of the data 3, 5, 6, 8, 13 is **1**

(A) 2.6 (B) 3

(C) 2.4 (D) 1.3

Q10. For 20 observations, $\Sigma x_i = 100$ and $\Sigma x_i^2 = 700$. The variance is **1**

(A) 35 (B) 25

(C) 5 (D) 10

Q11. The classes 0–10, 10–20, 20–30 and 30–40 have frequencies 5, 9, 16 and 10 respectively. The median of the data is **1**

(A) 22.5 (B) 23.75

(C) 25 (D) 24

Q12. If the variance of a set of observations is zero, then **1**

(A) the mean is zero (B) the median is zero

(C) all the observations are equal (D) the range is 1

Assertion–Reason Based Questions

Directions: Question numbers 13 and 14 are Assertion and Reason based questions carrying 1 mark each. Two statements are given, one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer from the options (A), (B), (C) and (D) as given below:

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

(B) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

(C) Assertion (A) is true but Reason (R) is false.

(D) Assertion (A) is false but Reason (R) is true.

Q13. **Assertion (A):** The mean deviation about the mean cannot be found by simply averaging the deviations $x_i - \bar{x}$. **1**

Reason (R): The sum of the deviations of the observations from their mean is zero.

Q14. **Assertion (A):** Adding 5 to each observation of a data does not change its standard deviation. **1**

Reason (R): If each observation is multiplied by 2, the standard deviation also becomes 2 times.

SECTION – B **(4 × 2 = 8)**

This section comprises of 4 very short answer (VSA) type questions of 2 marks each.

Q15. Fig. 4 shows the dot plot of the observations of a data. **2**

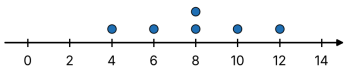


Fig. 4

(i) Read the observations from the dot plot and find their mean. **[1]**

(ii) Find the mean deviation about the mean. **[1]**

Q16. Find the mean and the variance of the data 4, 7, 10, 13, 16. **2**

Q17. **(A)** Find the mean deviation about the median for the data 11, 3, 8, 6, 15. **2**

OR

(B) Find the mean deviation about the mean for the following data:

x	1	3	5	7
f	4	3	2	1

Q18. **(A)** Find the variance and the standard deviation of the data 2, 4, 4, 4, 5, 5, 7, 9. **2**

OR

(B) The mean and variance of 5 observations are 6 and 5.2 respectively. If three of the observations are 3, 6 and 8, find the other two observations.

SECTION – C (3 × 3 = 9)

This section comprises of 3 short answer (SA) type questions of 3 marks each.

Q19. Fig. 5 shows the histogram of the marks of 20 students, grouped in classes of width 10. **3**

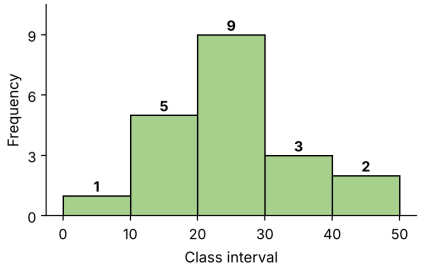


Fig. 5

(i) Read the frequencies from the histogram and find the mean of the distribution. **[1]**

(ii) Find the variance and the standard deviation. **[2]**

Q20. **(A)** Find the mean deviation about the median for the following data: **3**

Class	0–10	10–20	20–30	30–40
Frequency	4	6	8	2

OR

(B) Find the mean deviation about the mean for the following data:

Class	0–20	20–40	40–60	60–80
Frequency	2	5	9	4

Q21. **(A)** The mean and standard deviation of 20 observations are found to be 10 and 4 respectively. On rechecking, it was found that an observation 5 was incorrectly copied; the correct observation was 25. Find the correct mean and the correct standard deviation. **3**

OR

(B) The variance of 12 observations is 16. Each observation is divided by 2 and then 3 is subtracted from it. Find the variance of the new observations and the sum of the squares of the deviations of the new observations from their mean.

SECTION – D (1 × 5 = 5)

This section comprises of 1 long answer (LA) type question of 5 marks.

Q22. **(A)** Calculate the mean, variance and standard deviation of the following distribution using the short-cut (step-deviation) method with assumed mean 55: **5**

Class	20–30	30–40	40–50	50–60	60–70	70–80	80–90
Frequency	2	4	9	13	12	9	1

OR

(B) Find the mean deviation about the median for the following data: **[5]**

x	5	10	15	20	25	30
f	2	2	8	7	10	11

SECTION – E (1 × 4 = 4)

This section comprises of 1 case study based question of 4 marks with sub-parts (i), (ii), (iii) of marks 1, 1, 2 respectively.

Q23. **Case Study:** A cricket coach records the runs scored by a batsman in six consecutive matches. The scores are shown in the bar chart in Fig. 6. The coach wants to study both the average performance and the consistency of the batsman. **4**

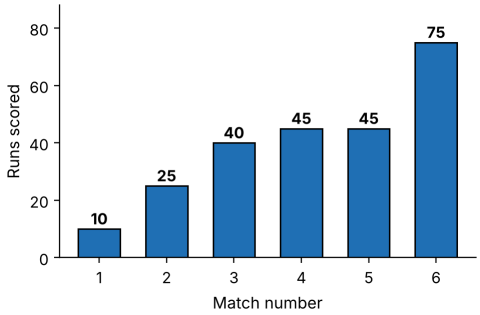


Fig. 6

Based on the given information, answer the following questions:

(i) Find the range of the runs scored. **[1]**

(ii) Find the mean of the runs scored. **[1]**

(iii) **(a)** Find the variance and the standard deviation of the runs scored. **[2]**

OR

(b) Find the mean deviation about the mean of the runs scored. **[2]**

— End of Question Paper —