## Case Study 3

The Eco Club of Hill View School conducted a study to record the amount of rainfall received during one week in their city. The purpose of the activity was to help Class 7 students understand how data is collected, organized, and interpreted in real life. The rainfall (in millimetres) recorded from Monday to Sunday was as follows:

$$12, 18, 12, 25, 18, 10, 15$$

First, the students organized the data in a frequency table showing how many times each rainfall value occurred. Then they calculated the mean rainfall of the week to understand the average rainfall. To identify the most common rainfall amount, they found the mode of the data. They also arranged the data in ascending order to calculate the median rainfall.

Next, the students drew a bar graph to compare rainfall on different days of the week. They also prepared a pie chart to represent the proportion of total rainfall contributed by each day. Finally, the teacher explained how rainfall data is useful for farmers, water management authorities, and city planners to make important decisions.

## Questions

1. How many days of rainfall data were collected in the study?

    A. 5
    B. 6
    C. 7
    D. 10

2. What is the mean (average) rainfall for the week?

    A. 15 mm
    B. 16 mm
    C. 17 mm
    D. 18 mm

3. Which rainfall amount is the mode of the data?

    A. 10 mm
    B. 12 mm
    C. 15 mm
    D. 25 mm

4. What is the median rainfall for the week?

    A. 12 mm
    B. 15 mm
    C. 18 mm
    D. 25 mm

5. Which graphical representation is best suited to show the rainfall comparison for each day?

    A. Pie chart
    B. Line graph
    C. Bar graph
    D. Pictograph

# Answer Key

1. **C**

   *Explanation:* Rainfall data was recorded from Monday to Sunday, which makes a total of 7 days.

2. **B**

   *Explanation:* Total rainfall $= 12 + 18 + 12 + 25 + 18 + 10 + 15 = 110$ mm. Mean rainfall $= \frac{110}{7} \approx 15.7$ mm, which is approximately 16 mm.

3. **B**

   *Explanation:* The rainfall values 12 mm and 18 mm occur twice. Since 12 mm is listed as an option and is one of the most frequent values, it is the correct mode from the given choices.

4. **B**

   *Explanation:* Arranged data: 10, 12, 12, 15, 18, 18, 25 The middle (4th) value is 15 mm. Hence, the median rainfall is 15 mm.

5. **C**

   *Explanation:* A bar graph is most suitable for comparing rainfall amounts on different days clearly.