

UNIQUE STUDY POINT

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Class: VI	Subject: Science	Session: 2025-26
Chapter: 04 - Data Handling and Presentation	Time: 1½ Hours	Max. Marks: 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

Q1. Data is best defined as:

- (a) A collection of numbers only
- (b) Facts, numbers, measures, observations conveying information
- (c) Only information about people
- (d) Charts and graphs

Q2. In a tally mark system, |||| represents:

- (a) 4
- (b) 5
- (c) 6
- (d) 3

Q3. The number of times a particular observation occurs is called its:

- (a) Data
- (b) Frequency
- (c) Scale
- (d) Range

Q4. A pictograph uses:

- (a) Numbers to represent data
- (b) Pictures or symbols to represent data
- (c) Only words to represent data
- (d) Tables to represent data

Q5. In a bar graph, all bars should have:

- (a) Different widths
- (b) The same width
- (c) No spacing between them
- (d) Different colors only

Q6. If in a pictograph, $\odot = 10$ students, then $\odot\odot\odot$ represents:

- (a) 20 students
- (b) 25 students
- (c) 30 students
- (d) 35 students

Q7. The scale in a bar graph is important because it:

- (a) Makes the graph colorful
- (b) Helps convert length/height to frequency
- (c) Is only decorative
- (d) Shows the title

Q8. Which representation is best for comparing heights of mountains?

- (a) Horizontal bar graph
- (b) Vertical bar graph
- (c) Pictograph only
- (d) Text description

Q9. Organizing data helps us to:

- (a) Make it more confusing
- (b) Understand and analyze it better
- (c) Increase its quantity
- (d) Hide important information

Q10. A bar graph with vertical bars is also called a:

- (a) Pie chart
- (b) Line graph
- (c) Column graph
- (d) Scatter plot

SECTION B - Short Answer Questions (2 marks each)

Q11. What is the difference between data and frequency? Give an example.

Q12. Why are tally marks useful when organizing data? How does the tally mark system work for numbers greater than 4?

Q13. In a pictograph, if $\star = 5$ books and you need to represent 23 books, how many symbols would you draw? Explain.

Q14. What are the advantages of using a bar graph over a frequency table?

SECTION C - Short Answer Questions (3 marks each)

Q15. The favorite fruits of 25 students in a class are: Apple, Mango, Banana, Apple, Orange, Mango, Apple, Banana, Mango, Apple, Orange, Apple, Mango, Mango, Banana, Apple, Apple, Mango, Orange, Banana, Mango, Apple, Mango, Banana, Apple.

Prepare a frequency table using tally marks. Which fruit is most popular?

Q16. Explain why choosing an appropriate scale is important when creating a bar graph. What problems might occur if the scale is not chosen carefully?

Q17. When would you prefer to use a pictograph instead of a bar graph? Give two situations with reasons.

SECTION D - Long Answer Question (5 marks)

Q18. A survey was conducted among 30 students about their mode of transport to school. The data collected is: Bus, Car, Bicycle, Bus, Walk, Bus, Car, Bus, Bicycle, Walk, Bus, Bus, Car, Bicycle, Bus, Walk, Bus, Car, Bicycle, Bus, Bus, Walk, Car, Bus, Bicycle, Walk, Bus, Bus, Car, Bicycle.

- (a) Organize this data in a frequency table using tally marks. (2 marks)
- (b) Draw a bar graph to represent this data using a scale of 1 unit = 1 student. (2 marks)
- (c) Which is the most commonly used mode of transport? (1 mark)

SECTION E - Case Study Based Questions (4 marks each)


Q19. Case Study 1: School Library





A school librarian recorded the number of books borrowed by students from different subjects over a week: Science: 45 books, Mathematics: 35 books, English: 50 books, Social Science: 30 books, Hindi: 25 books

Based on this data, answer the following:

- (a) Which subject books were borrowed the most? (1 mark)
- (b) How many more English books were borrowed compared to Hindi books? (1 mark)
- (c) If you were to represent this data in a bar graph, what scale would you choose? Explain why. (2 marks)

Q20. Case Study 2: Traffic Survey

Traffic police recorded the number of different vehicles passing through a crossing between 8 AM and 9 AM. The data is represented in a pictograph where  = 20 vehicles:

Cars: 
Motorcycles: 
Buses: 
Auto-rickshaws: 

Based on this data, answer the following:

- (a) How many cars passed through the crossing? (1 mark)
- (b) Which type of vehicle was most common? How many were there? (1 mark)
- (c) What is the total number of vehicles that passed through the crossing? (1 mark)
- (d) Why might there be so many motorcycles compared to buses? (1 mark)

SECTION A - Answers to MCQs

1. (b) Facts, numbers, measures, observations conveying information
2. (b) 5
3. (b) Frequency
4. (b) Pictures or symbols to represent data
5. (b) The same width
6. (c) 30 students
7. (b) Helps convert length/height to frequency
8. (b) Vertical bar graph
9. (b) Understand and analyze it better
10. (c) Column graph

SECTION B - Answers to Short Answer Questions

11.

Difference between data and frequency:

- Data is the collection of facts, numbers, or observations. For example: Blue, Red, Blue, Green, Blue
- Frequency is the number of times a particular observation appears in the data. For example: Blue appears 3 times, so its frequency is 3

12.

Usefulness of tally marks:

- Tally marks help in counting and organizing data quickly
- They make it easy to see frequencies at a glance
- For numbers greater than 4, we group them in sets of 5 by drawing four vertical lines (||||) and then crossing them with a fifth diagonal line (||||), making it easier to count in groups of 5

13.

Representing 23 books:

- Since $\star = 5$ books
- $23 \div 5 = 4$ remainder 3
- So we need 4 full stars and $\frac{3}{5}$ of a star (represented as a partial star)
- Total symbols: $\star\star\star\star$ and a partial star representing 3 books

14.

Advantages of bar graph over frequency table:

- Visual representation makes comparisons easier and quicker
- Immediately shows which category has highest/lowest frequency
- More engaging and easier to understand at a glance
- Helps in identifying patterns and trends quickly

SECTION C - Answers to Short Answer Questions

15.

Frequency Table:

Fruit	Tally Marks	Frequency
Apple		10
Mango		9
Banana		5
Orange		3

Most popular fruit: Apple (frequency = 10)

16.

Importance of appropriate scale:

- The scale must be chosen so that the bar graph fits properly on the paper
- It should accurately represent the data without distortion
- If scale is too small: bars may become too tall to fit on the page
- If scale is too large: differences between values may not be clearly visible
- A good scale makes the graph visually appealing and easy to read

17.

When to prefer pictograph over bar graph:

Situation 1: For younger children or primary classes

Reason: Pictures are more engaging and easier for young children to understand than abstract bars

Situation 2: When presenting data to a general audience (like in newspapers or posters)

Reason: Pictographs are more visually attractive and can quickly grab attention, making the data more accessible to everyone

SECTION D - Answer to Long Answer Question

18.

(a) Frequency Table:

Mode of Transport	Tally Marks	Frequency
Bus		14
Car		7
Bicycle		6
Walk		5

(b) Bar Graph: (Draw a bar graph with proper scale, labels, and title)

- X-axis: Mode of Transport
- Y-axis: Number of Students (Scale: 1 unit = 1 student)
- Bars at heights 14, 7, 6, and 5 for Bus, Car, Bicycle, and Walk respectively

(c) Most commonly used mode of transport: Bus (14 students)

SECTION E - Answers to Case Study Based Questions

19.

(a) English books were borrowed the most (50 books)

(b) Difference = $50 - 25 = 25$ more English books were borrowed compared to Hindi books

(c) Appropriate scale: 1 unit length = 5 books

Reason:

- The highest value is 50 books, so we need at least 10 units if we use scale of 1 unit = 5 books
- This scale is convenient as all values (45, 35, 50, 30, 25) are multiples of 5
- The graph will fit nicely on standard paper and differences will be clearly visible
- Using 1 unit = 1 book would make the graph too large, while 1 unit = 10 books might not show differences clearly

20.

(a) Number of cars = $5 \times 20 = 100$ cars

(b) Motorcycles were most common

Number of motorcycles = $8 \times 20 = 160$ motorcycles

(c) Total vehicles:

- Cars: 100
- Motorcycles: 160
- Buses: $2 \times 20 = 40$
- Auto-rickshaws: $4 \times 20 = 80$
- Total = $100 + 160 + 40 + 80 = 380$ vehicles

(d) Possible reasons for more motorcycles than buses:

- Motorcycles are more affordable and easier to maintain for individuals
- They are faster in traffic and can maneuver easily
- More people own private motorcycles than buses
- Buses are mainly for public transport and are fewer in number

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