

Part A: Multiple Choice Questions (1-5)

Instructions: Choose the correct answer from the four given options.

Question 1

Using tally marks, which one of the following represents the number eight?

(A) ||||| |||

(B) ||||

(C) ||||| ||

(D) ||||| |||

Solution: (D) ||||| |||

Explanation:

- ||||| represents 5
- ||| represents 3
- Therefore: $5 + 3 = 8$

The correct tally mark representation for 8 is ||||| |||.

Question 2

The marks (out of 10) obtained by 28 students in a Mathematics test are listed below:

8, 1, 2, 6, 5, 5, 5, 0, 1, 9, 7, 8, 0, 5, 8, 3, 0, 8, 10, 10, 3, 4, 8, 7, 8, 9, 2, 0

The number of students who obtained marks more than or equal to 5 is: (A) 13 (B) 15 (C) 16 (D) 17

Solution: (D) 17

Step-by-step solution:

1. First, arrange the marks in ascending order: 0, 0, 0, 0, 1, 1, 2, 2, 3, 3, 4, 5, 5, 5, 5, 6, 7, 7, 8, 8, 8, 8, 8, 9, 9, 10, 10
2. Count marks ≥ 5 :
 - Marks = 5: 4 students
 - Marks = 6: 1 student
 - Marks = 7: 2 students
 - Marks = 8: 6 students
 - Marks = 9: 2 students
 - Marks = 10: 2 students
3. Total = $4 + 1 + 2 + 6 + 2 + 2 = 17$ students

Question 3

In Question 2 above, the number of students who scored marks less than 4 is: (A) 15 (B) 13 (C) 12 (D) 10

Solution: (D) 10

Step-by-step solution: From the arranged data: 0, 0, 0, 0, 1, 1, 2, 2, 3, 3, 4, 5, 5, 5, 5, 6, 7, 7, 8, 8, 8, 8, 8, 8, 9, 9, 10, 10

Students with marks < 4 :

- Marks = 0: 4 students
- Marks = 1: 2 students
- Marks = 2: 2 students
- Marks = 3: 2 students

Total = $4 + 2 + 2 + 2 = 10$ students

Question 4

The choices of fruits of 42 students in a class are as follows:

A, O, B, M, A, G, B, G, A, G, B, M, A, G, M, A, B, G, M, B, A, O, M, O, G, B, O, M, G, A, A, B, M, O, M, G, B, A, M, O, M, O

Where A, B, G, M and O stand for Apple, Banana, Grapes, Mango and Orange respectively. Which two fruits are liked by an equal number of students? (A) A and M (B) M and B (C) B and O (D) B and G

Solution: (D) B and G

Step-by-step solution: Count each fruit:

- A (Apple): 8 occurrences
- B (Banana): 8 occurrences
- G (Grapes): 8 occurrences
- M (Mango): 10 occurrences
- O (Orange): 8 occurrences

Banana (B) and Grapes (G) are both liked by 8 students each.

Question 5

According to the data in Question 4, which fruit is liked by most of the students? (A) O (B) G (C) M (D) A

Solution: (C) M

From the count in Question 4, **Mango (M) is liked by 10 students**, which is the highest.

Part B: True/False Questions (6-13)

Instructions: State whether the given statements are True (T) or False (F).

Question 6

In a bar graph, the width of bars may be unequal.

Solution: False

Explanation: In a bar graph, bars of uniform width are drawn horizontally or vertically with equal spacing between them.

Question 7

In a bar graph, bars of uniform width are drawn vertically only.

Solution: False

Explanation: In a bar graph, bars of uniform width can be drawn both horizontally and vertically with equal spacing between them.

Question 8

In a bar graph, the gap between two consecutive bars may not be the same.

Solution: False

Explanation: In a bar graph, bars of uniform width are drawn with equal spacing between them.

Question 9

In a bar graph, each bar (rectangle) represents only one value of the numerical data.

Solution: True

Explanation: Each bar in a bar graph represents a single data value or category.

Question 10

To represent the population of different towns using a bar graph, it is convenient to take one-unit length to represent one person.

Solution: False

Explanation: Population numbers are usually very large, so we need an appropriate scale (e.g., 1 unit = 1000 people) rather than 1 unit = 1 person.

Question 11

Pictographs and bar graphs are pictorial representations of numerical data.

Solution: True

Explanation: Both pictographs and bar graphs are visual/pictorial methods of representing numerical data.



Question 12

An observation occurring five times in data is recorded as ||||| using tally marks.

Solution: False

Explanation: Five occurrences are represented as ||||| (four vertical lines with the fifth line crossing through them diagonally).

Question 13

In a pictograph, if a symbol  represents 50 books in a library shelf, then the symbol  represents 25 books.

Solution: True

Explanation: If one full symbol represents 50 books, then half a symbol represents 25 books.

Part C: Fill in the Blanks (14-20)**Question 14**

A _____ is a collection of numbers gathered to give some meaningful information.

Solution: data

Question 15

The data can be arranged in a tabular form using _____ marks.

Solution: tally

Question 16

A _____ represents data through pictures of objects.

Solution: pictograph

Question 17

In a bar graph, _____ can be drawn horizontally or vertically.

Solution: bars

Question 18

In a bar graph, bars of _____ width can be drawn horizontally or vertically with _____ spacing between them.

Solution: uniform, equal



Question 19

An observation occurring seven times in data is represented as _____ using tally marks.

Solution: ||||| ||

Explanation: Seven = 5 + 2, so we write ||||| (for 5) followed by || (for 2).

Question 20

In a pictograph, if a symbol  represents 20 flowers in a basket, then  stands for _____ flowers.

Solution: 60

Explanation: $3 \times 20 = 60$ 🌸 flowers

Part D: Data Handling Problems (21-27)

Question 21

On the scale of 1-unit length = 10 crore, the bar of length 6 units will represent _____ crore and _____ units will represent 75 crore.

Solution: 60 crore, 7.5 units

Calculations:

- 6 units = $6 \times 10 = 60$ crore
- For 75 crore: $75 \div 10 = 7.5$ units

Question 22

In an examination, the grades achieved by 30 students of a class are given below. Arrange these grades in a table using tally marks:

B, C, C, E, A, C, B, B, D, D, D, D, B, C, C, C, A, C, B, E, A, D, C, B, E, C, B, E, C, D

Solution:

Grade	Tally Marks	Number of Students
A		3
B		7
C		10
D		6
E		4

Total = 30 students ✓

Question 23

The number of two-wheelers owned individually by each of 50 families are listed below. Make a table using tally marks:

1, 1, 2, 1, 1, 1, 2, 1, 2, 1, 0, 1, 1, 2, 3, 1, 2, 1, 1, 2, 1, 2, 3, 1, 0, 2, 1, 0, 2, 1, 2, 1, 2, 1, 1, 4, 1, 3, 1, 1, 2, 1, 1, 1, 1, 2, 3, 2, 1, 1

Find the number of families having two or more two-wheelers.

Solution:

Number of Two-wheelers	Tally Marks	Number of Families
0		
1		
2		
3		
4		

Total = 50 families ✓ **Families with 2 or more two-wheelers: $14 + 4 + 1 = 19$ families**

Question 24

The lengths in centimeters (to the nearest centimeter) of 30 carrots are given as follows:

15, 22, 21, 20, 22, 15, 15, 20, 20, 15, 20, 18, 20, 22, 21, 20, 21, 18, 21, 18, 20, 18, 21, 18, 22, 20, 15, 21, 18, 20

Arrange the data in a table using tally marks and answer the following questions:

(a) What is the number of carrots which have length more than 20 cm? (b) Which length occurs maximum number of times? Minimum number of times?

Solution:

Length (cm)	Tally Marks	Number of Carrots
15	IIII	5
18	IIII I	6
20	IIII IIII	9
21	IIII I	6
22	IIII	4

Total = 30 carrots ✓

(a) Carrots with length > 20 cm:

- 21 cm: 6 carrots
- 22 cm: 4 carrots
- Total: $6 + 4 = 10$ carrots

(b)

- **Maximum frequency:** 20 cm (9 times)
- **Minimum frequency:** 22 cm (4 times)

Question 25

Thirty students were interviewed to find out what they want to be in the future. Their responses are listed below:

doctor, engineer, doctor, pilot, officer, doctor, engineer, doctor, pilot, officer, pilot, engineer, officer, pilot, doctor, engineer, pilot, officer, doctor, officer, doctor, pilot, engineer, doctor, pilot, officer, doctor, pilot, doctor, engineer

Arrange the data in a table using tally marks.

Solution:

Response	Tally Marks	Number of Students
Doctor	IIII IIII	10
Engineer	IIII I	6
Pilot	IIII III	8
Officer	IIII I	6

Total = 30 students ✓

Question 26

Following are the choices of games of 40 students of Class VI:

football, cricket, football, kho-kho, hockey, cricket, hockey, kho-kho, tennis, tennis, cricket, football, football, hockey, kho-kho, football, cricket, tennis, football, hockey, kho-kho, football, cricket, cricket, football, hockey, kho-kho, tennis, football, hockey, cricket, football, hockey, cricket, football, kho-kho, football, cricket, hockey, football

(a) Arrange the choices of games in a table using tally marks. (b) Which game is liked by most of the students? (c) Which game is liked by minimum number of students?

Solution:

(a) Tally Table:

Game	Tally Marks	Number of Students
Football	IIII IIII III	13

Game	Tally Marks	Number of Students
Cricket	IIII III	9
Hockey	IIII I	6
Kho-kho	IIII III	8
Tennis	IIII	4

Total = 40 students ✓

(b) Football is liked by most students (13 students). (c) Tennis is liked by minimum number of students (4 students).

Question 27

Fill in the blanks in the following table which represents shirt sizes of 40 students:

Shirt Size	Tally Marks	Number of Students
30	III	3
32	IIII	-
34	_____	8
36	IIII II	-
38	IIII	10
40	_____	7

Solution:

Shirt Size	Tally Marks	Number of Students
30	III	3
32	IIII	5
34	IIII III	8
36	IIII II	7
38	IIII IIII	10
40	IIII II	7

Total = 40 students ✓

Key Concepts Summary

Tally Marks:

- Each stroke | represents 1
- Every 5th stroke crosses the previous 4: |||||
- Example: 7 = ||||| |

Data Representation:

- **Pictograph:** Uses pictures/symbols to represent data
- **Bar Graph:** Uses bars of uniform width with equal spacing
- **Tally Marks:** Quick way to record and count data

Important Points:

1. Always verify your total count matches the given number
2. In pictographs, fractional symbols represent proportional values
3. Bar graphs can be horizontal or vertical
4. Equal spacing between bars is essential
5. Use appropriate scales for large numbers