# MATHEMATICS MOCK TEST

**Class: VI | Set: 03**

**Time: 2 Hours | Written Marks: 35 | Viva: 5 | Total: 40 Marks**

**NAME:** _____ **ROLL NO:** _____

## SECTION A

**(1 Mark Each)**

1. Check if $2,108$ is divisible by $4$ using the divisibility rule.
2. Represent $0.8$ on a number line.
3. Write the decimal for the fraction $\frac{4}{5}$.
4. What is the measure of the angle formed by the hands of a clock at $2$ o'clock?
5. If a student represents $24$ students using a symbol that stands for $6$, how many symbols will they draw?

## SECTION B

**(2 Marks Each)**

6. Find the sum of the smallest and the largest $4$-digit palindromes.
7. Write each of the following as a decimal:
   (a) Two hundred and five tenths (b) $70 + 8 + \frac{9}{100}$
8. Draw a line segment $\overline{LM}$ of length $6.7$ cm and construct its perpendicular bisector using a ruler and compasses.
9. The following data shows the number of absentees in a class for 6 days: $2, 4, 1, 0, 3, 2$. Show this data using Tally Marks.
10. Subtract $2.051$ kg from $5.4$ kg.

## SECTION C

**(3 Marks Each)**

11. In a theatre, $129$ people came to watch a show on the first day. If almost the same number of people came every day, estimate the total collection for a week, given each ticket costs ₹$201$.
12. Abhishek had ₹$7.45$. He bought toffees for ₹$5.30$. Find the balance amount left with Abhishek. Express the answer in Rupees using decimals.
13. Draw a line segment $\overline{AB}$. Take any point $P$ **outside** it. Using a ruler and compasses, draw a line perpendicular to $AB$ passing through $P$.

**14.** The following pictograph shows the number of fruit trees in a garden.

| **Fruit** | **Number of Trees** ($\triangle = 10$ trees) |
|---|---|
| Mango | $\triangle\ \triangle\ \triangle\triangle$ |
| Apple | $\triangle\ \triangle\ \triangle$ |
| Guava | $\triangle\ \triangle\ \triangle\ \triangle\ \triangle$ |

(i) How many Mango trees are there? (ii) Which fruit has the maximum trees? (iii) Find the total number of trees.

## SECTION D

**(4 Marks Each - Case Study)**

**Case Study 1: The Supercell Grid Challenge**
In a ”Number Play” game, students are analyzing a grid filled with distinct numbers to find ”supercells.”

| | | | |
|---|---|---|---|
| 4491 | 6443 | 1930 | 3024 |
| 5875 | 5037 | 5113 | 8054 |
| 7089 | 4219 | 6031 | 2368 |

(i) A ”supercell” is a cell whose value is greater than all its neighbors. Identify any two supercells from the grid above. (2 Marks)

(ii) Is it possible to fill a grid with all distinct numbers such that there are no supercells? Briefly justify. (2 Marks)

**Case Study 2: Constructing Design**
A student is asked to create a geometric design using specific angles.

(i) Construct an angle of $60^\circ$ using only a ruler and compasses. (2 Marks)

(ii) Use the angle bisector method to divide this $60^\circ$ angle into two equal parts of $30^\circ$ each. (2 Marks)

## VIVA VOCE

**(5 Marks)**

- **Logic:** After how many iterations starting with 3814 do we arrive at Kaprekar’s constant?
- **Decimals:** Which is smaller: $1.09$ or $1.093$?
- **Construction:** How many lines can be drawn passing through two given points?
- **Data Handling:** In a bar graph, do the widths of the bars matter or the heights?
- **Estimation:** If there are 55 seeds in 8 fruits, estimate the number of seeds in each fruit.