MATHEMATICS MOCK TEST

Class: VI | Set: 21

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Write the decimal "One point seven zero eight" in figures.
2. How many times does the digit 9 occur if we write all the numbers from 1 to 100?
3. Express 750 m in kilometres, using decimals.
4. What is the measure of an angle formed by two perpendicular lines?
5. If a symbol represents 10 students, how many students are represented by $2\frac{1}{2}$ symbols?

SECTION B

(2 Marks Each)

6. Form the greatest 6-digit number using the digits $6, 5, 9,$ and 3, repeating any two digits and using each digit at least once.
7. Write "208.154" in expanded form.
8. Draw a line AB. Take a point P **outside** it. Draw a line passing through P and perpendicular to AB using a ruler and compasses.
9. Evaluate the product: $2.4 \times 1.5 \times 2.5$.
10. A die was thrown 20 times and the following scores were recorded:
    $1, 3, 2, 5, 6, 2, 2, 2, 4, 1, 2, 3, 2, 2, 3, 2, 5, 4, 1, 6$.
    Organize this data in a table using tally marks.

SECTION C

(3 Marks Each)

11. The clock just displayed the palindromic time $10:01$. After how much time will this clock display the **next** palindromic time? Show the calculation.
12. Ramesh covers 36 km 235 m by taxi, 4 km 85 m by rickshaw and 1 km 80 m on foot. What is the total distance covered by him in kilometres (using decimals)?
13. Using a pair of compasses, construct an angle of $22\frac{1}{2}^\circ$. (Hint: Bisect 45°).
14. The following data represents the number of students who joined various hobby clubs:

Club	Music	Dance	Art	Yoga
Students	20	35	25	15

Represent this data using a Bar Graph on your answer sheet.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Supercell Grid Search
In a "Number Play" workshop, students are studying a grid of distinct numbers. A "supercell" is a cell whose value is greater than all its adjacent cells.

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

(i) From the grid above, identify any two supercells. (2 Marks)

(ii) Is it possible to fill a 3×3 grid with all distinct numbers such that there are **no** supercells? Justify. (2 Marks)

Case Study 2: Construction of a Gift Box
A student is asked to construct a square card and a rectangular base for a gift box using a ruler and compasses.

(i) Construct a square of side length 5 cm. (2 Marks)

(ii) Construct a rectangle $ABCD$ in which side $AB = 4.5$ cm and diagonal $BD = 5.4$ cm. (2 Marks)

VIVA VOCE

(5 Marks)

- **Number Play:** What is the value of the Kaprekar's constant for 4-digit numbers?
- **Decimals:** How many decimal places are in the result of 0.014×0.46?
- **Constructions:** What is the measure of the angle between two parallel lines?
- **Data Handling:** What is the difference between a Bar Graph and a Histogram?
- **Estimation:** If there are 55 seeds in 8 fruits, estimate the number of seeds in each fruit.