MATHEMATICS MOCK TEST

Class: VI | Set: 18

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Write "9.008" in expanded form.
2. Write the decimal "Eleven point zero zero four" in figures.
3. How many 4-digit numbers are there in all?
4. How many lines can pass through two given points?
5. If a symbol represents 10 units in a pictograph, how many symbols are needed for 35 units?

SECTION B

(2 Marks Each)

6. Write the smallest 7-digit number having four different digits.
7. Write the place value of each digit in the decimal 13.065.
8. Draw a line segment $PQ = 6.2$ cm and draw its perpendicular bisector using a ruler and compasses.
9. Find the difference: $3.4 - 0.612$.
10. A die was thrown 10 times and the following scores were recorded: $1, 6, 2, 3, 2, 4, 5, 2, 1, 6$. Prepare a frequency table using tally marks.

SECTION C

(3 Marks Each)

11. Start with the number 3814. Show the iterations (subtracting smallest from largest digit formation) to arrive at the Kaprekar's constant (6174).
12. Evaluate the following product: $2.1 \times 0.21 \times 0.021$.
13. Using a pair of compasses, construct an angle of $150°$. (Hint: Angle between $120°$ and $180°$).
14. The following table shows the number of cars sold by a dealer in 4 months:

Month	Jan	Feb	Mar	Apr
No. of Cars	300	450	500	350

Represent the data using a Bar Graph with a scale of 1 unit length $= 50$ cars.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Supercell Search
In a number game, a "supercell" is defined based on the relationship between a number and its neighbors. Look at the following row of cells:
8010, 2367, 942, 1163, 125, 3418, 3814, 3184, 3481.

(i) Find the number of supercells in the row above if a supercell is a value greater than both its immediate neighbors. (2 Marks)

(ii) Is it possible to fill a grid with distinct numbers such that there are NO supercells? Give a brief reasoning. (2 Marks)

Case Study 2: Constructing a Window Frame
A student is asked to construct a rectangular model for a window frame in a geometry project.

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

(ii) What will be the measure of each interior angle of the rectangle? (2 Marks)

VIVA VOCE

(5 Marks)

- **Numbers:** What is the sum of the digits of the number 3814?
- **Decimals:** How many decimal places will be in the product of $0.2 \times 0.02 \times 0.002$?
- **Constructions:** Can we construct a $22\frac{1}{2}^\circ$ angle by bisecting a 45° angle?
- **Data:** In a bar graph, do the bars have uniform width or uniform height?
- **Estimation:** If there are 55 seeds in 8 fruits, estimate the number of seeds in each fruit.