MATHEMATICS MOCK TEST

Class: VIII | Set: 06

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Solve for y: $5y + 3 = 18$.
2. Evaluate: $\sqrt[3]{1000} - \sqrt[3]{125}$.
3. If $A = \{2, 4, 6, 8\}$ and $B = \{4, 8, 12\}$, find $n(A \cap B)$.
4. If x and y are in inverse variation and x is doubled, what happens to the value of y?
5. Are the diagonals of a rectangle always equal in length? (Yes/No).

SECTION B

(2 Marks Each)

6. Find the square root of 2025 using the long division method.
7. Solve the inequation $4x - 7 \leq 5$ and represent the solution set if x is a natural number.
8. Calculate the simple interest on ₹4000 for 3 years at 5% per annum.
9. If 20 men can complete a piece of work in 12 days, how many days will it take for 1 man to finish the same work?
10. Three angles of a quadrilateral are $75°, 90°$ and $75°$. Find the measure of the fourth angle.

SECTION C

(3 Marks Each)

11. Find the smallest number by which 250 must be multiplied so that the product becomes a perfect cube.
12. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $A = \{x : x \text{ is odd}\}$ and $B = \{x : x \text{ is a prime number}\}$. Find $(A \cup B)'$.
13. 12 cows can graze a field in 10 days. How many cows would be needed to graze the same field in 8 days? (Use variation method).
14. Find the compound interest on ₹12,500 for 2 years at 12% per annum compounded annually.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Kitchen Renovation
A homeowner hires two workers, Amit and Bharat, to paint the kitchen. Amit alone can paint the kitchen in 12 hours, while Bharat alone takes 15 hours.

(i) If Amit and Bharat work together, how many hours will they take to complete the painting? (2 Marks)

(ii) If they work together for 4 hours and then Amit leaves, what fraction of the work remains for Bharat to finish? (2 Marks)

Case Study 2: Designing a Parallelogram Frame
A carpenter is making a wooden frame in the shape of a parallelogram $ABCD$. The measures of two adjacent angles are given as $(2x + 5)^\circ$ and $(3x - 15)^\circ$.

(i) Find the value of x using the property of adjacent angles of a parallelogram. (2 Marks)

(ii) Find the measure of all four angles of this wooden frame. (2 Marks)

VIVA VOCE

(5 Marks)

- **Squares:** How many natural numbers lie between 9^2 and 10^2?
- **Sets:** What is the difference between a "Finite Set" and an "Infinite Set"?
- **Quadrilaterals:** Does every rectangle qualify as a parallelogram? Why?
- **Inequations:** What happens to the inequality sign when you multiply both sides by a negative number?
- **Cubes:** What is the digit in the units place of the cube of 7?