MATHEMATICS MOCK TEST

Class: VIII | Set: 03

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Find the square root of 0.09.
2. If $A = \{a, b, c\}$ and $B = \{c, d, e\}$, find $n(A \cup B)$.
3. Evaluate: $(-3)^3 + 3^2$.
4. Solve for x: $4x - 5 = 7$.
5. If the four angles of a quadrilateral are equal, what is the measure of each angle?

SECTION B

(2 Marks Each)

6. Find the smallest number by which 72 must be multiplied so that the product is a perfect square.
7. Solve the inequation $\frac{x}{2} + 5 < 8$ and represent the solution set if $x \in \mathbb{N}$.
8. 8 kg of sugar costs ₹240. How much sugar can be bought for ₹450?
9. The adjacent angles of a parallelogram are $(3x - 4)^\circ$ and $(3x + 10)^\circ$. Find the value of x.
10. Find the simple interest on ₹4500 for 3 years at 5% per annum.

SECTION C

(3 Marks Each)

11. A can do a piece of work in 20 days and B can finish the same work in 30 days. How long will they take to complete the work if they work together?
12. Find the cube root of 2744 by prime factorization method.
13. If $U = \{x : x \leq 10, x \in \mathbb{N}\}$, $A = \{2, 4, 6, 8, 10\}$ and $B = \{1, 3, 5, 7, 9\}$, find $A \cup B$, $A \cap B$ and A'.
14. Find the compound interest on ₹8000 for 2 years at 10% per annum compounded annually.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Army Camp Provisions
An army camp had food provisions for 300 soldiers for 42 days.

(i) If 50 more soldiers join the camp, for how many days will the provisions last? (2 Marks)

(ii) If the provisions are to last for 63 days, how many soldiers should be moved to another camp? (2 Marks)

Case Study 2: Designing a Rectangular Garden
A landscape artist is designing a rectangular garden $ABCD$. The perimeter of the garden is 140 m and the length is 10 m more than its breadth.

(i) Form a linear equation to find the length and breadth of the garden. (2 Marks)

(ii) Find the area of this rectangular garden. (2 Marks)

VIVA VOCE

(5 Marks)

- **Sets:** What is a ”Finite Set”? Give an example.
- **Variation:** If x increases and y decreases such that $xy = k$, what type of variation is it?
- **Roots:** How do you find the square root of 1225 using the prime factorization method?
- **Quadrilaterals:** What is the difference between a square and a rhombus regarding their angles?
- **Inequations:** How is a linear inequation different from a linear equation in terms of the number of solutions?