MATHEMATICS MOCK TEST

Class: VIII | Set: 04

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 0.64.
2. If $A = \{x : x \text{ is a vowel in English alphabet}\}$, find the cardinality $n(A)$.
3. Evaluate: $\sqrt[3]{216} - \sqrt[3]{64}$.
4. Solve for z: $2z - 5 = 11$.
5. If the diagonals of a quadrilateral are equal and bisect each other at 90°, name the specific quadrilateral.

SECTION B

(2 Marks Each)

6. Find the smallest number by which 2560 must be divided so that the quotient is a perfect cube.
7. Solve the inequation $4x - 12 \geq 8$ and represent the solution set if $x \in \{4, 5, 6, 7, 8\}$.
8. A machine fills 420 bottles in 3 hours. How many bottles will it fill in 5 hours?
9. Find the area of a rhombus whose diagonals are 10 cm and 24 cm.
10. Calculate the Simple Interest on ₹6000 at 8% per annum for 18 months.

SECTION C

(3 Marks Each)

11. A can finish a work in 12 days and B can finish it in 18 days. Both worked together for 4 days and then A left. How many more days will B take to complete the remaining work?
12. Find the square root of 7744 using the long division method.
13. In a survey of 100 people, 65 like tea, 45 like coffee and 20 like both. Draw a Venn diagram and find how many people like neither tea nor coffee.
14. Find the compound interest on ₹12,000 for 1 year at 10% per annum compounded half-yearly.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Cattle Farm Management
A farmer has enough food to feed 20 animals in his cattle for 9 days.

(i) If 10 more animals join the cattle, how long will the food last? (2 Marks)

(ii) If the farmer wants the food to last for exactly 12 days, how many animals should he sell/remove? (2 Marks)

Case Study 2: Geometric Properties in Design
A designer is creating a tile in the shape of a parallelogram $ABCD$. The adjacent angles are given as $(2x + 10)^\circ$ and $(3x - 40)^\circ$.

(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 the parallelogram. (2 Marks)

VIVA VOCE

(5 Marks)

- **Cubes:** Is 1000 a perfect cube? Why or why not?
- **SI & CI:** Under what condition is the Simple Interest equal to the Compound Interest for a given principal and rate?
- **Sets:** Define ”Subsets” and ”Proper Subsets” with an example.
- **Equations:** What is the difference between a Linear Equation and a Linear Inequation?
- **Work:** If person X completes a task in 5 days, what is the work done by X in 2 days?