MATHEMATICS MOCK TEST

Class: VIII | Set: 02

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 1.44.
2. If $U = \{1, 2, 3, 4, 5\}$ and $A = \{2, 4\}$, find A'.
3. Evaluate: $\sqrt[3]{125} + \sqrt[3]{27}$.
4. Solve for x: $\frac{x}{5} + 3 = 7$.
5. What is the sum of all interior angles of a quadrilateral?

SECTION B

(2 Marks Each)

6. Find the smallest number by which 675 must be divided so that the quotient is a perfect cube.
7. Solve the inequation $3x - 5 < 7$ and represent the solution set if $x \in \mathbb{W}$ (Whole Numbers).
8. A car travels 432 km in 48 litres of petrol. How far will it travel in 20 litres of petrol?
9. In a rhombus, the diagonals are 16 cm and 12 cm. Find the area of the rhombus.
10. Find the compound interest on ₹5000 for 1 year at 8% per annum compounded half-yearly.

SECTION C

(3 Marks Each)

11. Tap A can fill a tank in 6 hours and Tap B can empty it in 8 hours. If both are opened together, how long will it take to fill the tank?
12. Find the square root of 7056 by prime factorization method.
13. If $A = \{x : x \text{ is a factor of } 12\}$ and $B = \{x : x \text{ is a factor of } 18\}$, find $A \cup B$ and $A \cap B$.
14. Find the difference between simple interest and compound interest on ₹10,000 for 2 years at 10% per annum.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The School Hostel Management
In a school hostel, there are enough food provisions for 150 students to last for 30 days.

(i) If 30 more students join the hostel, for how many days will the provisions last? (2 Marks)

(ii) If the provision must last for 45 days, how many students should leave the hostel? (2 Marks)

Case Study 2: Angles of a Parallelogram
A student is analyzing the geometric properties of a parallelogram $ABCD$. It is given that the measure of $\angle A$ is $(3x + 10)^\circ$ and $\angle B$ is $(2x + 20)^\circ$.

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

(ii) Calculate the measure of all four angles ($\angle A, \angle B, \angle C, \angle D$) of the parallelogram. (2 Marks)

VIVA VOCE

(5 Marks)

- **Sets:** Define the ”Universal Set” with an example.
- **Mensuration:** How does the area of a square change if its side is doubled?
- **Quadrilaterals:** What is the difference between a Trapezium and a Parallelogram?
- **Roots:** What is the cube root of 0.008?
- **Interest:** Why is Compound Interest usually higher than Simple Interest for the same period (greater than 1 year)?