MATHEMATICS MOCK TEST

Class: VIII | Set: 2

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Test the divisibility of 1095 by 5 using the divisibility rule.
2. Rewrite the statement using set notation: "q does not belong to set B".
3. If 18 notebooks cost ₹333, what is the cost of one notebook?
4. Solve the linear equation: $5y + 18 = 11 - 2y$.
5. If a tap takes 3 hours to fill a cistern, what part of the cistern is filled in 1 hour?

SECTION B

(2 Marks Each)

6. Find the values of A and B in the following subtraction:

$$\begin{array}{cc} 6 & A \\ - \; A & B \\ \hline 3 & 7 \end{array}$$

7. Find the power set of $A = \{0, 5\}$.
8. If 45 iron rods of the same size weigh 12.6 kg, what will be the weight of 24 such rods?
9. A, B and C can do a piece of work in 12 days, 15 days and 10 days respectively. In what time will they all together finish it?
10. If 10 is added to four times a certain number, the result is 5 less than five times the number. Find the number.

SECTION C

(3 Marks Each)

11. In a three-digit number, the hundreds digit is twice the tens digit while the units digit is thrice the tens digit. Also, the sum of its digits is 18. Find the number.
12. Let $A = \{1, 4, 7, 8\}$ and $B = \{4, 6, 8, 9\}$. Find $(A - B)$ and $(B - A)$.
13. 13 men can weave 117 baskets in a week. How many men will be needed to weave 189 baskets in 3 days?
14. Divide 180 into two parts such that the first part is 12 less than twice the second part.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: Efficiency and Remuneration Analysis
In a construction project, three workmen A, B, and C are evaluated. A is thrice as good a workman as B, and B is twice as good a workman as C. All three took up a job and received ₹1800 as remuneration.

(i) Determine the ratio of the work efficiencies of A, B, and C. (2 Marks)

(ii) Find the individual share of money for worker C based on the ratio of efficiency. (2 Marks)

Case Study 2: Geometric Area and Linear Equations
The length of a rectangular plot of land exceeds its breadth by 23 m. If the length is decreased by 15 m and the breadth is increased by 7 m, the area is reduced by 360 m^2.

(i) Let the breadth be x. Form a linear equation to represent the relationship between the original area and the modified area. (2 Marks)

(ii) Find the original length and breadth of the plot. (2 Marks)

VIVA VOCE

(5 Marks)

- **Sets:** What is the difference between a finite set and an infinite set?
- **Numbers:** If a number is divisible by 8, is it always divisible by 4? Explain.
- **Linear Equations:** How do you find the solution of an equation involving fractions like $x/2 = 5$?
- **Variation:** Explain with an example what happens to the value of y in inverse variation when x is doubled.
- **Time & Work:** If A can do 1/4 of a work in 5 days, how many days will he take to complete the whole work?