MATHEMATICS MOCK TEST

Class: VIII | Set: 6

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Test the divisibility of 35344 by 4 using the divisibility rule.
2. Rewrite the following statement using set notation: "a and b are members of set C".
3. If 18 notebooks cost ₹333, find the cost of one notebook.
4. Solve the linear equation: $21 - 3(x - 7) = x + 20$.
5. A pipe can fill a tank in 16 hours. What part of the tank is filled in 1 hour?

SECTION B

(2 Marks Each)

6. A two-digit number is 3 more than 4 times the sum of its digits. If 18 is added to the number, its digits are reversed. Find the original number.
7. Find the power set of $B = \{7, 9\}$.
8. If 45 iron rods of the same size weigh 12.6 kg, what will be the weight of 24 such rods?
9. A and B together can finish a work in 30 days. They worked at it for 20 days and then B left. Find the fraction of work remaining.
10. One-third of a number exceeds one-fourth of the number by 15. Find the number.

SECTION C

(3 Marks Each)

11. Find the value of A and B in the following addition:

$$\begin{array}{cccc} & & A & A \\ + & & B & 6 \\ \hline & C & 2 & 5 \end{array}$$

12. Let $\xi = \{x \mid x \in N, x < 50\}$, $A = \{x \mid x^2 \in \xi\}$, and $C = \{x \mid x$ is a factor of $36\}$. Find $n(A)$ and $n(C)$. Is $n(A) < n(C)$?
13. 13 men can weave 117 baskets in a week. How many men will be needed to weave 189 baskets in 3 days?

14. Solve the following linear equation:

$$\frac{4x+1}{3} + \frac{2x-1}{2} - \frac{3x-7}{5} = 6$$

SECTION D

(4 Marks Each - Case Study)

Case Study 1: Labor and Wages
In a factory, the management calculates earnings based on workforce composition. It is known that 5 men or 7 women can earn ₹700 per day.

(i) How much does one man and one woman earn individually per day? (2 Marks)

(ii) Calculate the total daily earnings of a group consisting of 7 men and 11 women. (2 Marks)

Case Study 2: The Proportional Addition
A student is given four numbers: $15, 23, 29$ and 44. The teacher asks to find a specific number to make them proportional.

(i) Let the number to be added be x. Form a mathematical equation showing that $(15 + x), (23 + x), (29 + x)$ and $(44 + x)$ are in proportion. (2 Marks)

(ii) Solve the equation to find the value of x. (2 Marks)

VIVA VOCE

(5 Marks)

- **Linear Equations:** If you add the same number to both sides of an equation, does the equality still hold?
- **Sets:** What is the difference between a ”Subset” and a ”Proper Subset”?
- **Numbers:** Test the divisibility of 64610 by 10.
- **Time & Work:** If A is twice as efficient as B, what is the ratio of time taken by A and B to complete the same work?
- **Variation:** If two variables x and y are in inverse variation, what happens to y when x is halved?