MATHEMATICS MOCK TEST

Class: VIII | Set: 3

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Test the divisibility of 830 by 2 using the divisibility rule.
2. Rewrite the statement using set notation: "Cardinal number of set E is 15".
3. If 50 pencils can be bought for ₹120, find the cost of one pencil.
4. Solve the linear equation: $21 - 3(x - 7) = x + 20$.
5. If one tap can fill a cistern in 5 hours, what part of the cistern is filled in 1 hour?

SECTION B

(2 Marks Each)

6. The units digit of a two-digit number is 3 and seven times the sum of the digits is the number itself. Find the number.
7. Describe the set in roster form: $B = \{x \mid x \in W, x \leq 6\}$.
8. If a car covers 56.7 km in 4.5 litres of petrol, how many kilometres will it cover in 26 litres of petrol?
9. A and B together can do a piece of work in 35 days, while A alone can do it in 60 days. How long would B alone take to do it?
10. Divide 25 into two parts such that 7 times the first part added to 5 times the second part makes 139.

SECTION C

(3 Marks Each)

11. Replace A, B and C by suitable numerals in the following multiplication:

$$\begin{array}{cccc} & & A & B \\ \times & & & 3 \\ \hline & C & A & B \end{array}$$

12. Let $A = \{a, b, c, d\}$, $B = \{b, c, e\}$, and $C = \{a, b, e\}$. Find $(A \cup B)$ and $(B \cap C)$.
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: Age and Time
A man is twice as old as his son. Twelve years ago, the man was thrice as old as his son.

(i) Let the son's present age be x. Form a linear equation to represent the condition from twelve years ago. (2 Marks)

(ii) Calculate the present ages of both the father and the son. (2 Marks)

Case Study 2: The Cistern and the Waste Pipe
A water tank has one filling tap and one waste pipe. The filling tap can fill the empty cistern in 3 hours, while the waste pipe can empty the full cistern in 5 hours.

(i) Calculate the net work done in 1 hour when both the tap and the waste pipe are open together. (2 Marks)

(ii) In what time will the empty cistern be full if both are kept open together? (2 Marks)

VIVA VOCE

(5 Marks)

- **Variation:** If the speed of a car increases, does the time taken to reach a destination follow direct or inverse variation?
- **Sets:** Define an "Infinite Set" and provide one example using numbers.
- **Linear Equations:** What is the degree of a linear equation?
- **Playing With Numbers:** State the divisibility rule for a number to be divisible by 3.
- **Time & Work:** If person X is twice as efficient as person Y, who will take more time to complete the same work?