MATHEMATICS MOCK TEST

Class: VIII | Set: 29

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Solve the inequation $x + 6 > 9$ where the replacement set is $\{1, 2, 3, 4, 5\}$.
2. Define the term **'Secant'** of a circle.
3. In which quadrant does the point $(-3, -7)$ lie?
4. Find the volume of a cube whose edge is 0.4 m.
5. A die is thrown once. What is the probability of getting an odd prime number?

SECTION B

(2 Marks Each)

6. Solve the inequation $4x - 5 \leq 11$ and represent the solution on a number line for $x \in \mathbb{N}$ (Natural numbers).
7. Find the circumference of a circle whose area is 616 cm^2. (Take $\pi = 22/7$)
8. Plot the points $A(0, 4)$ and $B(0, -4)$ on a coordinate plane. What is the length of the segment AB?
9. Find the total surface area of a cuboid of dimensions 8 cm $\times$ 6 cm $\times$ 4 cm.
10. A bag contains 4 red, 5 blue, and 6 green balls. One ball is drawn at random. Find the probability that it is **not** blue.

SECTION C

(3 Marks Each)

11. Solve: $\frac{x - 2}{3} + 5 \geq 7$. List the solution set if the replacement set is the set of integers $\mathbb{I}$ such that $-5 \leq x \leq 15$.
12. A circular track of width 3.5 m runs around a circular pond of radius 14 m. Find the area of the track.
13. Draw the graph of the linear equation $y = x - 2$ by finding at least three solutions.
14. A road roller of diameter 84 cm and length 1.5 m takes 800 complete revolutions to level a playground. Find the area of the playground in square metres.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Multi-Color Marble Game
In a jar, there are 5 red marbles, 8 white marbles, and 7 green marbles. A student draws one marble at random for a game.

(i) What is the probability that the drawn marble is either white or green? (2 Marks)

(ii) What is the probability that the drawn marble is neither red nor green? (2 Marks)

Case Study 2: Industrial Metal Recasting
A solid metallic cube of edge 12 cm is melted and recast into a rectangular block (cuboid) whose base measures 16 cm $\times$ 9 cm.

(i) Calculate the volume of the original metallic cube. (2 Marks)

(ii) Find the height of the rectangular block formed after recasting. (2 Marks)

VIVA VOCE

(5 Marks)

- **Inequations:** What is the difference between the solution of $x < 3$ when $x \in \mathbb{N}$ and when $x \in \mathbb{W}$?
- **Circles:** Define an 'Arc' and distinguish between a 'Major Arc' and a 'Minor Arc'.
- **Graphs:** What is the x-coordinate of any point that lies on the y-axis?
- **Solids:** What is the formula for the Volume of a solid cylinder?
- **Probability:** What is the range of values for the probability of any event?