MATHEMATICS MOCK TEST

Class: VIII | Set: 19

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Solve the inequation $2x \leq 10$ and find the solution set for $x \in \mathbb{N}$.
2. Define an 'Arc' of a circle.
3. On which axis does the point $P(0, -5)$ lie?
4. Find the total surface area of a cube with an edge of 3 cm.
5. A bag contains 3 red and 5 black balls. What is the probability of drawing a red ball?

SECTION B

(2 Marks Each)

6. Solve $12 - x \geq 7$ and represent the solution on a number line for $x \in \mathbb{W}$ (Whole numbers).
7. Find the area of a circle whose diameter is 28 cm.
8. Plot point $Q(4, 7)$ on a coordinate plane. What is its distance from the x-axis?
9. Find the lateral surface area of a cuboid of length 12 cm, breadth 8 cm and height 10 cm.
10. Two coins are tossed simultaneously. Find the probability of getting exactly one head.

SECTION C

(3 Marks Each)

11. Solve the linear inequation: $\frac{2x + 3}{5} < 3$, where $x \in \mathbb{N}$. List the solution set.
12. Find the circumference of a circle whose area is 616 cm^2. (Take $\pi = 22/7$)
13. Draw the graph of the equation $y = x + 2$ by plotting at least three points.
14. The radius and height of a cylinder are in the ratio $5 : 7$ and its volume is 550 cm^3. Find its actual radius.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Number Card Game
A box contains 25 cards numbered from 1 to 25. A student draws a card at random.

(i) What is the probability that the card drawn has a number which is a multiple of 4 or 6? (2 Marks)

(ii) Find the probability that the card drawn has a perfect square number. (2 Marks)

Case Study 2: Civil Works (Plastering a Tank)
A rectangular open water tank is 4 m long, 3 m wide, and 2 m deep. The internal surface (four walls and the base) needs to be plastered.

(i) Calculate the total area to be plastered in square metres. (2 Marks)

(ii) If the cost of plastering is ₹50 per m^2, find the total cost of the work. (2 Marks)

VIVA VOCE

(5 Marks)

- **Graphs:** What is the name of the point where the x-axis and y-axis intersect?
- **Circles:** What is the relation between the diameter and the circumference of a circle?
- **Inequations:** If you multiply an inequation by a negative number, what happens to the inequality sign?
- **Probability:** What is the range of probability for any event?
- **Solids:** How many edge(s) does a sphere have?