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# MATHEMATICS MOCK TEST

Class: VIII | Set: 28

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

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NAME: \_\_\_\_\_

ROLL NO: \_\_\_\_\_

## SECTION A

(1 Mark Each)

1. Solve the inequation  $x - 2 \leq 1$  where  $x$  is a natural number ( $x \in \mathbb{N}$ ).
2. Find the length of the longest chord of a circle whose radius is 5.5 cm.
3. What is the  $x$ -coordinate of a point that lies on the  $y$ -axis?
4. Find the total surface area of a cube with an edge of 1 cm.
5. A die is thrown once. What is the probability of getting a number 5?

## SECTION B

(2 Marks Each)

6. Solve the inequation  $2x + 3 < 11$  and represent the solution on a number line for  $x \in \mathbb{W}$  (Whole numbers).
7. Find the area of a circle whose circumference is 132 cm. (Take  $\pi = 22/7$ )
8. Plot the points  $A(3, 2)$  and  $B(3, -2)$  on a coordinate plane. Find the length of the segment  $AB$ .
9. Find the volume of a cylinder with base radius 7 cm and height 10 cm.
10. A card is drawn from a well-shuffled pack of 52 cards. Find the probability that it is a 'Club'.

## SECTION C

(3 Marks Each)

11. Solve the linear inequation  $3(x - 1) \leq 2x + 5$  and list the solution set if  $x$  is an integer ( $x \in \mathbb{I}$ ) such that  $-5 \leq x \leq 10$ .
12. A circular track of width 7 m is built around a circular pond of radius 21 m. Find the area of the track.
13. Draw the graph of the linear equation  $y = 4 - x$  by finding at least three solutions.
14. A solid metallic cuboid of dimensions 15 cm  $\times$  10 cm  $\times$  8 cm is melted and recast into a cube. Find the edge of the cube.

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## SECTION D

(4 Marks Each - Case Study)

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### Case Study 1: The Probability of Winning

In a fair game, two fair coins are tossed simultaneously. The results are recorded to calculate the probability of winning prizes.

- (i) List all the possible outcomes (Sample Space) when two coins are tossed. (2 Marks)
- (ii) Find the probability of getting (a) exactly two heads and (b) at least one tail. (2 Marks)

### Case Study 2: Civil Construction (Water Tank)

A rectangular masonry water tank has internal dimensions  $4\text{ m} \times 3\text{ m} \times 2\text{ m}$ .

- (i) Find the capacity of the tank in litres. ( $1\text{ m}^3 = 1000\text{ litres}$ ). (2 Marks)
- (ii) Find the total area of the four internal walls that need to be plastered. (2 Marks)

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## VIVA VOCE

(5 Marks)

- **Inequations:** If  $x \leq 5$ , does it mean  $x$  can be 5? Explain the difference between  $<$  and  $\leq$ .
- **Circles:** Define 'Annulus' (Circular Ring) and give its area formula.
- **Graphs:** In which quadrant does the point  $(-3, -4)$  lie?
- **Solids:** What is the formula for the volume of a right circular cylinder?
- **Probability:** What is an 'Equally Likely' outcome? Give an example.