MATHEMATICS MOCK TEST

Class: VIII | Set: 16

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Solve the inequation $x + 3 < 5$ where x is a natural number ($x \in \mathbb{N}$).
2. Find the area of a circle whose radius is 7 cm. (Take $\pi = 22/7$)
3. In which quadrant of the coordinate plane does the point $(-4, 5)$ lie?
4. Find the volume of a cube whose edge is 4 cm.
5. A coin is tossed once. What is the probability of getting a 'Tail'?

SECTION B

(2 Marks Each)

6. Solve the linear inequation $3x - 2 \leq 7$ and represent the solution on a number line, given $x \in \mathbb{W}$ (Whole numbers).
7. The circumference of a circle is 44 cm. Find its radius.
8. Plot the points $A(2, 3)$ and $B(-2, 3)$ on a coordinate system. Name the line segment AB.
9. Find the total surface area of a cuboid of dimensions 10 cm $\times$ 8 cm $\times$ 5 cm.
10. A die is thrown once. Find the probability of getting an even number.

SECTION C

(3 Marks Each)

11. Solve: $2(x - 3) \leq 4x - 8$, and list the solution set if x is an integer ($x \in \mathbb{I}$).
12. Find the area of a ring (annulus) whose outer radius is 14 cm and inner radius is 7 cm.
13. Draw the graph of the linear equation $y = 2x$. (Take at least three points).
14. How many bricks, each of size 25 cm $\times$ 10 cm $\times$ 8 cm, will be required to build a wall 5 m long, 2 m high and 20 cm thick?

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Deck of Cards
A standard deck of 52 playing cards is shuffled. One card is drawn at random.

(i) Find the probability that the card drawn is a 'Red King'. (2 Marks)

(ii) Find the probability that the card drawn is either a 'Spade' or an 'Ace'. (2 Marks)

Case Study 2: Water Storage Capacity
A cylindrical water tank has a diameter of 1.4 m and a height of 2 m.

(i) Find the volume of the tank in cubic metres. (2 Marks)

(ii) Calculate the capacity of the tank in litres. (1 m$^3 = 1000$ litres). (2 Marks)

VIVA VOCE

(5 Marks)

- **Inequations:** What is the difference between the solution of $x = 2$ and $x \leq 2$?
- **Circles:** Define 'Sector' and 'Segment' of a circle.
- **Graphs:** What are the coordinates of the Origin?
- **Solids:** What is the relation between the volume of a cylinder and a cone with the same radius and height?
- **Probability:** What is the sum of the probabilities of all possible outcomes of an experiment?