

# MATHEMATICS MOCK TEST

Class: IX | Set: 20

Time: 1 Hour 30 Minutes | Written Marks: 35 | Viva: 5 | Total: 40 Marks

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

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

## SECTION A

(1 Mark Each)

1. Find the value of  $k$ , if  $x = 2, y = 1$  is a solution of the equation  $2x + 3y = k$ .
2. If the radius of a sphere is  $2r$ , then what is its volume?
3. Find the complement of  $35^\circ$ .
4. In which quadrant does the point  $(-2, 4)$  lie?
5. What is the semi-perimeter of a triangle with sides 12 cm, 16 cm and 20 cm?

## SECTION B

(2 Marks Each)

6. The total surface area of a cube is  $150 \text{ cm}^2$ . Find its volume.
7. In the given figure,  $l \parallel m$  and  $n$  is a transversal. If  $\angle 1 = 60^\circ$ , find all other angles.
8. Find the mean of the first six even natural numbers.
9. Express  $y$  in terms of  $x$  for the equation  $3x + 2y = 12$ . Also, find the value of  $y$  when  $x = -2$ .
10. Prove that in an isosceles triangle, the angles opposite to equal sides are equal.

## SECTION C

(3 Marks Each)

11. A cylindrical tank has a capacity of  $5632 \text{ m}^3$ . If the diameter of its base is 16 m, find its depth.
12. Represent the following frequency distribution by a histogram:

<b>Class Interval</b>	10-20	20-30	30-40	40-50	50-60
<b>Frequency</b>	6	12	15	9	4

13. In a  $\triangle ABC$ , the bisectors of  $\angle B$  and  $\angle C$  intersect each other at the point  $O$ . Prove that  $\angle BOC = 90^\circ + \frac{1}{2}\angle A$ .
14. Find the area of a triangle two sides of which are 18 cm and 10 cm and the perimeter is 42 cm.

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## SECTION D

(4 Marks Each)

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The taxi fare in a city is as follows: For the first kilometre, the fare is ₹10 and for the subsequent distance it is ₹6 per km. Taking the distance covered as  $x$  km and total fare as ₹ $y$ , write a linear equation for this information and draw its graph.

16. A hemispherical tank is made up of an iron sheet 1 cm thick. If the inner radius is 1 m, then find the volume of the iron used to make the tank.

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## VIVA VOCE

(5 Marks)

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- **Geometry:** What is the sum of angles on a straight line?
- **Surface Area:** What is the formula for the lateral surface area of a cuboid?
- **Statistics:** Define 'Median' for a set of data.
- **Algebra:** How many solutions can a linear equation in two variables have?
- **Coordinate Geometry:** What are the coordinates of a point lying on the x-axis?