MATHEMATICS MOCK TEST

Class: IX | Set: 23

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. Find the area of a triangle whose sides are 3 cm, 4 cm, and 5 cm.
2. What are the coordinates of the origin in a Cartesian plane?
3. If the radius of a cylinder is r and height is h, write the formula for its total surface area.
4. Find the value of k if $x = 1, y = 2$ is a solution of $x + 3y = k$.
5. Define an obtuse angle.

SECTION B

(2 Marks Each)

6. The angles of a quadrilateral are in the ratio $2 : 4 : 5 : 7$. Find the measure of each angle.
7. Find the volume of a sphere whose diameter is 21 cm.
8. In a circle of radius 5 cm, find the length of a chord which is at a distance of 3 cm from the centre.
9. If the mean of $6, 4, 7, p, 10$ is 8, find the value of p.
10. Prove that the diagonals of a parallelogram bisect each other.

SECTION C

(3 Marks Each)

11. In $\triangle ABC$, AD is the altitude to BC such that $AD = 12$ cm, $BD = 5$ cm and $CD = 9$ cm. Find the area and perimeter of $\triangle ABC$.
12. Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.
13. Draw a frequency polygon for the following data:

Class Interval	0–10	10–20	20–30	30–40	40–50
Frequency	4	10	16	12	6

14. $ABCD$ is a rhombus. Show that diagonals AC and BD bisect each other at right angles.

SECTION D

(4 Marks Each)

A lead shot of diameter 6 cm is melted and cast into a right circular cylinder of height 24 cm and radius r. Find the value of r.

16. Prove that the line segment joining the mid-points of two sides of a triangle is parallel to the third side and is half of it.

VIVA VOCE

(5 Marks)

- **Geometry:** What is the sum of the interior angles of a pentagon?
- **Statistics:** Define 'Range' of a data set.
- **Circles:** What is the length of the longest chord of a circle called?
- **Triangles:** What is the difference between AAS and ASA congruence?
- **Algebra:** How many solutions does the linear equation $2x + 5 = 0$ have in one variable?