MATHEMATICS MOCK TEST

Class: IX | Set: 29

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. State Euclid's Postulate 2 regarding a terminated line.
2. What is the formula for the volume of a right circular cone?
3. If two lines intersect, what is the sum of any two adjacent angles so formed?
4. Find the class mark of the class interval $150 - 200$.
5. Write the linear equation $2x + 3y = 9.35$ in the form $ax + by + c = 0$.

SECTION B

(2 Marks Each)

6. A point C is called the mid-point of a line segment AB if $AC = BC$. Prove that every line segment has one and only one mid-point.
7. In the given figure, if $AB \parallel CD$, $\angle APQ = 50°$ and $\angle PRD = 127°$, find x and y.
8. The sides of a triangular park are 120 m, 80 m and 50 m. Find its area using Heron's formula.
9. Find the surface area of a sphere of diameter 21 cm.
10. Find the mean of the squares of the first five natural numbers.

SECTION C

(3 Marks Each)

11. Prove that the sum of the angles of a triangle is $180°$.
12. A lead shot of diameter 6 cm is melted and cast into a right circular cylinder of height 24 cm. Find the radius of the cylinder.
13. 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.
14. The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian society is given:

Section	Number of girls per thousand boys
SC	940
ST	970
Non SC/ST	920
Backward districts	950

Represent the data using a Bar Graph.

SECTION D

(4 Marks Each)

15. **Question 15:** A park, in the shape of a quadrilateral $ABCD$, has $\angle C = 90°, AB = 9$ m, $BC = 12$ m, $CD = 5$ m and $AD = 8$ m. How much area does it occupy? (Use Heron's formula where necessary).

16. **Question 16:** Construct a frequency polygon for the following distribution:

Marks	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	7	10	15	8	12	3

VIVA VOCE

(5 Marks)

- **Euclid:** What is the difference between an Axiom and a Postulate?
- **Spheres:** What happens to the volume of a sphere if its radius is doubled?
- **Statistics:** Define 'Frequency Density'.
- **Lines:** What are 'Interior Angles on the same side of the transversal'?
- **Heron:** Can Heron's formula be used for a right-angled triangle?