MATHEMATICS MOCK TEST

Class: VIII | Set: 6

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

NAME: _____ **ROLL NO:** _____

SECTION A

(1 Mark Each)

1. If x and y are inversely proportional and $x = 4$ when $y = 15$, find y when $x = 10$.
2. State the number of vertices and edges in a Pentagonal Prism.
3. Find the area of a rhombus whose diagonals are 16 cm and 30 cm.
4. If 10 men can do a work in 20 days, how many men can do the same work in 1 day?
5. What is the base radius of a cylinder whose circumference is 44 cm?

SECTION B

(2 Marks Each)

6. A machine fills 420 bottles in 3 hours. How many bottles will it fill in 5 hours?
7. A can finish a work in 18 days and B can finish the same work in 15 days. B worked for 10 days and left the job. In how many days can A alone finish the remaining work?
8. The area of a trapezium is 480 cm^2, the distance between two parallel sides is 15 cm and one of the parallel sides is 20 cm. Find the other parallel side.
9. Find the height of a cylinder whose radius is 7 cm and the total surface area is 968 cm^2.
10. Using Euler's formula, find the number of faces of a polyhedron having 6 vertices and 12 edges.

SECTION C

(3 Marks Each)

11. A loaded truck travels 14 km in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?
12. Two taps can fill a tank in 12 and 15 hours respectively. A third tap can empty it in 20 hours. If all three taps are opened together, in how much time will the tank be filled?
13. The floor of a building consists of 3000 tiles which are rhombus shaped and each of its diagonals are 45 cm and 30 cm in length. Find the total cost of polishing the floor, if the cost per m^2 is ₹4.
14. A rectangular sheet of paper 44 cm $\times$ 18 cm is rolled along its length to form a cylinder. Find the volume of the cylinder.

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Cattle Farm Management
A farmer has enough food to feed 20 animals in his cattle for 6 days.

(i) How long would the food last if there were 10 more animals in his cattle? (2 Marks)

(ii) If the farmer wants the food to last for exactly 8 days, how many animals should he sell? (2 Marks)

Case Study 2: Designing a Water Tank
An architect designs a cylindrical water tank for a small colony. The tank has a diameter of 1.4 m and a height of 2 m.

(i) Find the lateral surface area of the tank that needs to be painted. (2 Marks)

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

VIVA VOCE

(5 Marks)

- **Proportion:** Explain why the number of workers and time taken to complete a job is always in inverse proportion.
- **Mensuration:** What is the area of a general quadrilateral if its diagonal and offsets are given?
- **3D Figures:** Can a polyhedron have 3 faces? Explain.
- **Volume:** If the side of a cube is tripled, what happens to its volume?
- **Time & Work:** If 2 people can complete a task in 4 hours, how much of the task is done by one person in one hour?