

---

# MATHEMATICS MOCK TEST

Class: VIII | Set: 12

---

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

---

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

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

---

## SECTION A

(1 Mark Each)

1. If two quantities  $x$  and  $y$  vary directly, find the value of  $y$  when  $x = 12$ , given  $x = 4$  when  $y = 16$ .
2. How many faces does a hexagonal pyramid have?
3. Find the area of a rhombus whose diagonals are 10 cm and 14 cm.
4. If  $A$  can finish a work in 20 days, how much work is completed in 5 days?
5. What is the volume of a cylinder with base radius  $r$  and height  $h$ ?

---

## SECTION B

(2 Marks Each)

6. 7 pipes are required to fill a tank in 1 hour 40 minutes. How long will it take if only 5 pipes of the same type are used?
7.  $A$  can do a work in 10 days and  $B$  can do it in 15 days. How many days will they take to finish the work together?
8. The area of a trapezium is  $120 \text{ cm}^2$  and the length of its parallel sides are 14 cm and 10 cm. Find the height of the trapezium.
9. Find the side of a cube whose total surface area is  $486 \text{ cm}^2$ .
10. Using Euler's formula, find the number of vertices of a polyhedron having 12 faces and 30 edges.

---

## SECTION C

(3 Marks Each)

11. A machine fills 840 bottles in six hours. How many bottles will it fill in five hours? Check if this is a direct or inverse proportion.
12.  $A$  and  $B$  together can finish a work in 6 days, while  $A$  alone can finish it in 9 days. In how many days can  $B$  alone finish the work?
13. Find the area of a rhombus whose side is 6 cm and whose altitude is 4.8 cm. If one of its diagonals is 8 cm long, find the length of the other diagonal.

- 
14. A closed cylindrical tank of radius 7 m and height 3 m is made from a sheet of metal. Find the total surface area of the tank. (Take  $\pi = \frac{22}{7}$ )

## SECTION D

(4 Marks Each - Case Study)

### Case Study 1: The Road Construction Project

A construction company observed that 12 workers can complete the repair of a road in 15 days.

- If the company wants the repair to be finished in only 10 days, how many more workers should be hired? (2 Marks)
- If the number of workers is reduced to 6, how long will it take to finish the same road work? (2 Marks)

### Case Study 2: Water Tank Capacity

A cylindrical water tank has a diameter of 1.4 m and its depth (height) is 2 m.

- Find the volume of the tank in cubic metres. (2 Marks)
- Find the capacity of this tank in litres ( $1 \text{ m}^3 = 1000 \text{ litres}$ ). (2 Marks)

## VIVA VOCE

(5 Marks)

- Proportion:** Give an example of inverse proportion in daily life.
- Euler's Formula:** What does the variable 'E' represent in  $F + V - E = 2$ ?
- Mensuration:** What is the area of a trapezium?
- Work:** If efficiency increases, what happens to the time taken for the work?
- Units:** How many cubic centimetres are there in 1 Litre?