
MATHEMATICS MOCK TEST

Class: VIII | Set: 10

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 are in inverse proportion, then $xy = k$. What is k called?
2. How many faces does a hexagonal prism have?
3. Area of a rhombus = $\frac{1}{2} \times (\dots)$ of its diagonals).
4. If A can finish a work in 15 days, how much work is finished in 5 days?
5. What is the total surface area of a cube of side a ?

SECTION B

(2 Marks Each)

6. 6 pipes fill a tank in 1 hour 20 minutes. How long will it take if only 5 pipes are used?
7. A and B together can finish a work in 12 days. A alone can do it in 20 days. How many days will B take to do it alone?
8. The parallel sides of a trapezium are 12 cm and 8 cm, and its area is 80 cm^2 . Find the distance between the parallel sides.
9. Find the side of a cube whose total surface area is 600 cm^2 .
10. Verify Euler's formula for a triangular prism (Faces = 5, Vertices = 6, Edges = 9).

SECTION C

(3 Marks Each)

11. 120 men had food provisions for 200 days. After 5 days, 30 men left. How long will the remaining food last?
12. A can do a piece of work in 10 days, B in 12 days and C in 15 days. How many days will they take to finish the work together?
13. Find the area of a polygon $ABCDE$ where diagonal $AD = 8 \text{ cm}$. The perpendiculars from B, C and E on AD are $BF = 2 \text{ cm}$, $CG = 3 \text{ cm}$ and $EH = 2.5 \text{ cm}$.
14. A cylindrical tank has a capacity of 1540 m^3 . If the diameter of its base is 14 m, find its depth. (Take $\pi = \frac{22}{7}$)

SECTION D

(4 Marks Each - Case Study)

Case Study 1: The Cattle Farm

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 8 days, how many animals should be removed from the farm? (2 Marks)

Case Study 2: Industrial Packaging

A company packs small cubes of side 10 cm into a large wooden crate of dimensions $1\text{ m} \times 0.5\text{ m} \times 0.2\text{ m}$.

- (i) Find the volume of one small cube in cubic centimetres. (2 Marks)
- (ii) Find the total number of cubes that can be packed in the large crate. (2 Marks)

VIVA VOCE

(5 Marks)

- **Proportion:** If the number of workers increases, what happens to the time taken to complete the work?
- **Mensuration:** What is the formula for the curved surface area of a cylinder?
- **Solids:** What is a regular polyhedron?
- **Units:** How many Litres are in 1 cubic metre?
- **Euler's Formula:** Can a polyhedron have 3 faces? Explain.