**STUDY MATERIAL**

**CHAPTER 11 : MENSURATION**

**KEY POINTS:-**

\* Area of parallelogram = Base × Height.

\* Area of triangle = × Base × Height.

\* Area of trapezium = ×(sum of parallel sides)×Height

\* Area of rhombus = ×Product of diagonals

\* Surface area of

1. a cuboid =2(lb+bh+hl)
2. a cube =6a2
3. a cylinder = 2$πr\left(r+h\right)$

\* Volume of

 (i) cuboid =lbh

 (ii) cube = l3

 (iii)cylinder =$ π$r2h

* 1m3 = 1000 litres

 **LEVEL 1**

1. Find the area of square with side 6 cm.
2. If a rectangle has length 14 cm and breadth 7 cm, find the perimeter of the rectangle.
3. Find the area of rhombus whose diagonals are 12cm and 9.2cm.
4. If the area of rhombus is 240cm and one of the diagonal is 16cm.find the other diagonal.

 **LEVEL 2**

1. Find the height of the cuboid whose volume is 275cm3 and base area is 25 cm2.
2. The area of a trapezium shaped field is 480 m2 , the distance between two parallel sides is 15 m and one of the parallel side is 20 m. Find the other parallel side.
3. Find the height of a cylinder whose radius is 7 cm and the total surface area is 968 cm2 .
4. A closed cylindrical tank of radius 7 m and height 3 m is made from a sheet of metal. How much sheet of metal is required?
5. The length, breadth and height of a cuboid are 20 cm, 15 cm, 10 cm respectively. Find its total surface area.

 **LEVEL 3**

1. A box is in the form of cuboid of dimensions ( 80$ × $30$× $40 ) cm. The base, the side faces and back faces are to be covered with a coloured paper. Find the area of paper needed.
2. The lateral surface area of a hollow cylinder is 4224 cm2. It is cut along its height and formed a rectangular sheet of width 33 cm. find the perimeter of rectangular sheet.
3. A roller takes 750 complete revolutions to move once over a level of road. Find the area of road if the diameter of the roller is 84 cm and length is 1 m.
4. In a building there are 24 cylindrical pillars with each having a radius 28 cm and height 4 m. Find the cost of painting the curved surface area of all pillars at the rate of Rs. 8 per meter square.
5. Mohan wants to buy a trapezium shaped field. Its side along the river is parallel to and twice the side along the road. If the area of this field is 10500 m2 and the perpendicular distance between the two parallel sides is 100 m, find the length of the side along the river.



 **WORKSHEET**

1. Find the area of rhombus whose diagonals are 15.5 cm and 7 cm.
2. Find the side of a cube whose surface area is 600 cm
3. A closed cylindrical tank of radius 7 m and height 3m is made from a sheet of metal. How much sheet of metal is required ?
4. The length ,breadth and height of a cuboid are 20 cm, 15 cm and 10 cm respectively. Find its total surface area.
5. An aquarium is in the form of a cuboid whose external measures are 80 cm × 30 cm × 40 cm. The base, side faces and back face are to be covered with a coloured paper. Find the area of the paper needed?

**ANSWERS**

1. 36 cm2
2. 42 cm
3. 55.2 cm2
4. 30 cm

**Level 2**

1. **11 cm**
2. **44cm**
3. **15 cm**
4. **440 m2**
5. 1300 cm2

**Level 3**

1. **8000 cm2**
2. **322 cm**
3. **1980 m2**
4. **Rs 1351.68**
5. **140 m**

**WORKSHEET**

1. **54.25 CM2**
2. **10 CM**
3. **1320 m2**
4. **1300 cm2**
5. **8000 cm2**