

# SURFACE AREA AND VOLUME- 9<sup>TH</sup>

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1. The paint in a certain container is sufficient to paint an area equal to  $9.375 \text{ m}^2$ . How many bricks of dimensions  $22.5\text{cm} \times 10\text{cm} \times 7.5\text{cm}$  can be painted out of this container?
2. The diameter of a roller is 84 cm and its length is 120 cm. IT takes 500 complete rotations to move once over to level a playground. Find the area of the playground.
3. Find-
  - a) Lateral or curved surface area of a closed cylindrical petrol storage tank that is 4.2m in diameter and 4.5m high.
  - b) How much steel was actually used in  $1/12$  of the steel used was wasted in making the tank.
4. What length of tarpaulin 3 m wide will be required to construct a conical tent of height 8 m and base radius 6m? Assume that the extra length of material that will be required for stitching margins and wastage in cutting approximately 20cm. (use  $\pi = 3.14$ )
5. The slant height and base diameter of a conical tomb are 25m and 14m respectively. Find the cost of white washing its curved surface at the rate of Rs. 210/100m<sup>2</sup>.
6. A hemispherical bowl made of brass has inner diameter 10.5cm. Find the cost of tin plating it on the inside at the rate of Rs. 16/100m<sup>2</sup>.
7. A right circular cylinder just encloses a sphere of radius  $r$ . Find-
  - a) Surface area of the sphere
  - b) Curved surface area of the cylinder
  - c) Ratio of a) and b)
8. A village, having a population of 4000, requires 150 litres of water per head per day. It has a tank measuring  $20\text{m} \times 15\text{m} \times 6\text{m}$ . For how many days will the water of this tank last?
9. The capacity of a closed cylindrical vessel of height 1m is 15.4 litres. How many square meters of metal sheet would be needed to fill it?
10. A lead pencil consists of a cylinder of wood with a solid cylinder of graphite filled in the interior. The diameter of the graphite is 1mm and the diameter of the pencil is 7mm. If the length of the pencil is 14cm, find the volume of the wood and that of the graphite.
11. A conical pit of top diameter 3.5m is 12m deep. What is its capacity in kilolitres?
12. Twenty seven solid iron spheres, each of radius  $r$  and surface area  $S$  are melted to form one sphere with surface area  $S'$ . Find the-
  - a) Radius  $r'$  of the new sphere
  - b) Ratio of  $S$  and  $S'$ .