# SURFACE AREAS AND VOLUMES

## ASSIGNMENT NO. 1

1. A conical pit of top diameter 3.5 m is 12 m deep. What is its capacity in litres?
2. The diameter of a roller is 42 cm and its length is 120 cm. It takes 500 complete revolutions to move once to level a playground. Find the area of playground in $m^2$.
3. A wall of length 10 m was to be built across an open ground. The height of the wall is 4 m and thickness of the wall is 24 cm. If the wall is to be built up with bricks whose dimensions are 24 cm × 12 cm × 8 cm, how many bricks would be required?
4. The diameter of moon is approximately $\frac{1}{4}^{th}$ of the diameter of earth. What fraction of volume of earth is the volume of moon?
5. If $h, c, V$ are respectively the height, curved surface and the volume of a cone. Prove that: $3\pi V h^3 - c^2 h^2 + 9V^2 = 0$
6. A solid cube of side 12 cm is cut into eight cubes of equal volume. What will be the side of the new cube? Also, find the ratio between their surface areas (surface areas of 8 new cubes and the original cube)
7. A solid shot – putt is a metallic sphere of radius 4.9 cm. Find the volume of the shot – putt.
8. Three cubes of edge 12 cm are joined together end to end. Find the volume of the resulting cuboid.
9. Curved surface area of a solid cone is 308 $cm^2$ and its slant height is 14 cm. Find:

a. Radius of base b. total surface area of the cone

10. The height of a cone is 16 cm and the base radius is 12 cm. Find the curved surface area and the volume of cone. (Use $\pi$ = 3.14)
11. A metal pipe is 77 cm long. The inner diameter of a cross – section is 4 cm, the outer diameter being 4.4 cm. Find the total surface area of the metal used.

12. A godown measures 45 m × 25 m × 10 m. If 8000 wooden crates each measuring 1.5 m × 1.25 m × 0.5 m are stored in the godown, find how many more such crates can be stored in the godown.
13. A hemispherical tank is made of iron sheet 1 cm thick. If the inner radius is 1 m then find the volume of iron used in the tank.