SURFACE AREAS AND VOLUMES

ASSIGNMENT NO. 4

1. A right ΔABC with sides 5 cm, 12 cm and 13 cm is revolved about its side 12 cm. Find the volume of the solid thus formed.
2. The inner diameter of a circular well is 3.5 m. It is 10 m deep. Find the cost of plastering the inner curved surface at the rate of Rs. 40 per m^2.
3. Two cubes of side 6 cm are joined end to end. Find the surface area of the resulting cuboid.
4. A shot – putt is a metallic sphere of radius 4.9 cm. If the density of the metal is 7.8 g/cm^3, find the mass of the shot – putt.
5. The height and slant height of a cone are 21 cm and 28 cm respectively. Find the volume of the cone.
6. Monica has a piece of canvas whose area is 551 m^2. She uses it to have a conical tent made, with a base radius of 7 m. Assuming that all the stitching margins and the wastage incurred while cutting, amounts to approximately 1 m^2, find the volume of the tent that can be made.
7. A square piece of paper of side 22 cm is rolled to form a cylinder. Find the volume of the cylinder. (Use $\pi = \frac{22}{7}$)
8. A shot – putt is a metallic sphere of radius 3.5 cm. If the density of the metal is 7.8 g per cm^3, find the mass of the shot – putt. (Use $\pi = \frac{22}{7}$)
9. The radius and height of a right circular cone are in the ratio 5 : 12. If its volume is 314 cm^3, find the slant height and radius of the cone. (Use $\pi = 3.14$)
10. A box with lid is made out of 2 cm thick wood. Its external length, breadth and height are 25 cm, 18 cm and 15 cm respectively. Find the capacity of the box and volume of the wood used.
11. Bhavya has a piece of canvas whose area is 552 m^2. She uses it to make a conical tent with a base radius 7 m. Assuming that all the stitching margins and the wastage incurred while cutting amounts to approximately 2 m^2. Find the volume of the tent that can be made with it. (take $\pi = \frac{22}{7}$)

12. A metallic pipe is 77 cm long. The inner diameter of a cross – section is 4 cm and outer diameter is 5.0 cm. Find its:

a. Inner curved surface area.
b. Outer curved surface area.
c. Total surface area.

13. A cylindrical container of base radius 28 cm contains sufficient water to submerge a rectangular block of iron with dimensions 32 cm $\times$ 22 cm $\times$ 14 cm. Find the rise in the level of the water, when the block is completely submerged.