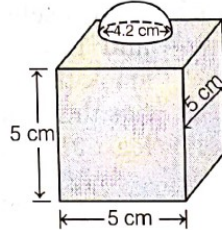


13. SURFACE AREAS AND VOLUMES

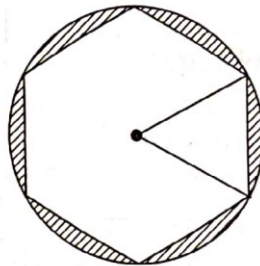
3 MARK QUESTIONS

1. A decorative block as shown in figure is made of two solids, a cube and a hemisphere. The base of the block is the cube with edge of 5 cm and the hemisphere attached on the top has a diameter of 4.2 cm. If the block is to be painted, then find the total area to be painted. [$\pi = 22/7$]



2. A cone of maximum size is cut-out from a cube of edge 14 cm. Find the surface area of the remaining solid left out after the cone is cut-out.

3. A round table cover has six equal designs as shown in the figure.



If the radius of the cover is 28 cm, then find the cost of making the design at the rate of Rs. 0.35 per cm^2 . [take $\sqrt{3} = 1.73$]

4. A conical vessel whose internal radius is 5 cm and height 24 cm, is full of water. The water is emptied into a cylindrical vessel with internal radius 10 cm. Find the height to which the water rises in the cylindrical vessel.

5. A hollow cylinder has solid hemisphere in one end and on the other end it is closed with a flat circular plate. The height of water is 10 cm when flat circular surface is downward. Find the level of water, when it is inverted upside down, common diameter is 7 cm and height of the cylinder is 20 cm.

6. A cylinder whose height is equal to its diameter has the same volume as a sphere of radius 4 cm. Calculate the cube of radius to the base of the cylinder correct to one decimal place.

7. A hollow sphere of internal and external radii 6 cm and 8 cm, respectively, is melted and recast into small cones of base radius 2 cm and height 8 cm. Find the number of cones.

ANSWERS

1. 163.86 cm^2 2. $(1022 + 154\sqrt{5})\text{cm}^2$ 3. Rs. 150.34 4. 2 cm 5. 12.33 cm

6. 42.67 cm^3 7. 37

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