Practice Challenge - Subjective

Subject: Mathematics

Topic : Surface areas and Volumes
Exam Prep 1

Class: X

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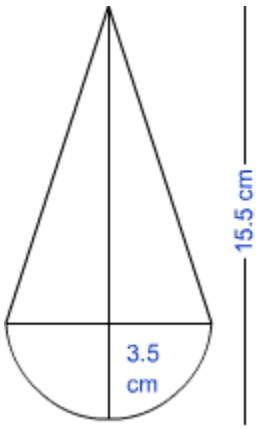
1. A toy is in the form of a cone of radius 3.5 cm mounted on a hemisphere of same radius. The total height of the toy is 15.5 cm. Find the total surface area of the toy.



2. A medicine capsule is in the shape of a cylinder with two hemispheres stuck to each of its ends. The length of the entire capsule is 14 mm and the diameter of the capsule is 5 mm. Find its surface area.

3. A container shaped like a right circular cylinder having diameter 12 cm and height 15 cm is full of ice cream. The ice cream is to be filled into cones of height 12 cm and diameter 6 cm, having a hemispherical shape on the top. Find the number of such cones which can be filled with ice cream.

4. Two cubes each of volume 125 cm^3 are joined end to end to form a solid. Find the surface area of the resulting cuboid.

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5. 150 spherical marbles, each of diameter 14 cm, are dropped in a cylindrical vessel of diameter 7 cm containing some water, which are completely immersed in water. Find the rise in the level of water in the vessel.

6. A farmer connects a pipe of internal diameter 25 cm from a canal into a cylindrical tank in his field, which is 12 m in diameter and 2.5 m deep. If water flows through the pipe at the rate of 3.6 km/hr, in how much time will the tank be filled? Also, find the cost of water if the canal department charges at the rate of Rs 0.07 per m^3.

7. If the perimeter of each face of a cube is 32 cm, find its lateral surface area.

8. A hemispherical bowl is made of steel, 0.25 cm thick.The inner radius of the bowl is 5 cm. Find the outer curved surface area of the bowl.
$\left[Assume\ \pi = \frac{22}{7}\right]$