

## Chapter-Surface area and volume

Q1.

A solid is in the shape of a cone mounted on a hemisphere of same base radius. If the curved surface areas of the hemispherical part and the conical part are equal, then find the ratio of the radius and the height of the conical part.

Q2.

A sphere of maximum volume is cut out from a solid hemisphere of radius  $r$ . What will be the ratio of the volume of hemisphere to that of the sphere?

Q3.

*The height of the cylinder in the figure is  $h$ . Two cones are formed as shown with heights  $3h/4$  and  $h/4$ . Write the ratio of the volume of the bigger cone to the smaller cone.*

Q4.

A solid is in the shape of a cone surmounted on a hemisphere. The radius of each of them being 3.5 cm and the total height of the solid is 9.5 cm. Find the volume of the solid

Q5.

A solid is in the form of a cylinder with hemispherical ends. The total height of the solid is 20 cm and the diameter of the cylinder is 7 cm. Find the total volume of the solid. (Use  $\pi = 22/7$ ).

Q6.

A sphere of diameter 6 cm is dropped into a cylindrical vessel, partly filled with water, whose diameter is 12 cm. If the sphere is completely submerged in water, by how much will the surface of water be raised in the cylindrical vessel?

Q7.

A solid sphere of radius 10.5 cm is melted and recast into smaller solid cones, each of radius 3.5 cm and height 3 cm. Find the number of cones so formed.

Q8.

A solid is in the shape of a cone mounted on a hemisphere of same base radius. If the curved surface areas of the hemispherical part and the conical part are equal, then find the ratio of the radius and the height of the conical part

Q9.

A hemispherical depression is cut out from one face of a cubical block of side 7 cm, such that the diameter of the hemisphere is equal to the edge of the cube. Find the surface area of remaining solid

Q10.

From a solid cylinder of height 2.8 cm and diameter 4.2 cm, a conical cavity of the same height and same diameter is hollowed out. Find the total surface area of the remaining solid