

I. Very Short Answer Type Questions

1. The curved surface area of a cone is 4070 cm^2 and its diameter is 70 cm. What is its slant height?
2. Find the curved surface area of a cone, with radius of base 28 cm and height 21 cm.
3. What is the capacity of a cone whose base area is 154 sq. cm and height is 12 cm?
4. Find, correct to two decimal places, the volume and surface area of a sphere of diameter 4.2 cm.
5. The surface area of a sphere is $452\frac{4}{7} \text{ cm}^2$. What is its volume ?
6. The volume of a sphere is $38,808 \text{ cm}^3$. Find its diameter.
7. A solid sphere of radius 20 cm is converted into eight equal solid spherical balls. Find the diameter of the spherical balls obtained.
8. A cone and a hemisphere have equal bases and equal volumes. Find the ratio of their heights.
9. Volume and surface area of a solid hemisphere are numerically equal. What is the diameter of hemisphere?
10. Total surface area of a cube is 216 cm^2 . Find its volume.
11. If a solid right-circular cone of height 24 cm and base radius 6 cm is melted and recast in the shape of a sphere, find the radius of the sphere.
12. Find the curved surface area of a right-circular cone of height 15 cm and base diameter 16 cm.

II. Short Answer Type Questions - I

13. A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder of radius 6 cm. Find the height of the cylinder.

14. Three solid metal cubes of edges 6 cm, 8 cm and 10 cm are melted and recasted into a single solid cube. Find the length of the edge of the cube so obtained.
15. The height of a cone is 5 m. Find the height of another cone which volume is equal to sixteen times the volume of given cone and radius is equal to diameter of given cone.
16. The volumes of two cones are in the ratio 2 : 3 and the ratio between their radii is also 2 : 3. Find the ratio between their heights.
17. The volumes of two right circular cones are in the ratio 3 : 5 and their heights are in the ratio 5 : 3. Find the ratio between their radii.
18. Find the weight of a solid cone whose base is of diameter 14 cm and vertical height 51 cm, supposing the material of which it is made weighs 10 grams per cubic centimetre.
19. A right triangle with sides 3 cm and 4 cm is revolved around its hypotenuse. Find the volume of double cone thus generated. (Take $\pi = 3.14$)
20. The volume of cone is $314\frac{2}{7}\text{ cm}^3$. Find its lateral surface area if height is 12 cm.
21. How many bricks, each 25 cm by 15 cm by 8 cm are required for a wall 32 m long, 10 m high and 30 cm thick?
22. A copper rod of diameter 1 cm and length 8 cm is drawn into a wire of length 18 m of uniform thickness. Find the thickness of the wire.
23. The volume of a rectangular solid is $3,600\text{ cm}^3$. If it is 20 cm long and 30 cm high, find its width.
24. A semi-circular thin sheet of metal of diameter 28 cm is bent and an open conical cup of largest size is made. Find the capacity (volume) of the cup. (Take $\sqrt{3} = 1.732$)
25. The radius and height of a cone are in the ratio 3 : 4. If its volume is 301.44 cm^3 , what is its radius? What is its slant height? (Take $\pi = 3.14$)
26. The radius of the base and the height of a solid cone are respectively 21 cm and 28 cm. Find the volume, the curved surface area and the total surface area of the cone.
27. A hollow spherical shell is made of a metal of density 5 g/cm^3 . If its internal and external radii are 42 cm and 45.5 cm respectively, find:
 - (i) the volume of metal in the shell
 - (ii) the weight of the shell. [Take $\pi = 3.14$]
28. Three spherical metal balls of radii 6 cm, 8 cm and x cm are melted and recasted into a single sphere of radius 12 cm. Find the value of x .
29. Find the weight of a hollow sphere of metal, having internal and external diameters 20 cm and 22 cm respectively; given 1 cm^3 of metal weighs 21 g.
30. A conical vessel of radius 6 cm and height 8 cm is completely filled with water. A sphere is lowered into the water and its size is such that when it touches the sides, it is just immersed. What fraction of water overflows?
31. How many solid spheres, each 6 cm in diameter, could be moulded from a solid metal cylinder height 20 cm and diameter 12 cm?
32. Two spheres of same metal weigh 1 kg and 7 kg. The radius of the smaller sphere is 3 cm. The two spheres are melted to form a single big sphere. Find the diameter of the new sphere.
33. A right circular cone of height 4 cm has a curved surface area 47.1 cm^2 . Find its volume. (Take $\pi = 3.14$)
34. A sphere of diameter 12 cm is dropped in a right circular cylindrical vessel, partly filled with water. If the sphere is completely submerged in water, the water level in the cylindrical vessel rises by $3\frac{5}{9}\text{ cm}$. Find the diameter of the cylindrical vessel.