GURUKUL FORTUNERS

Test- Math class-9th

Chapter- Surface area and volume (13)

1. How much ice-cream can be put into a cone with base radius 3.5 cm and height 12 cm?
2. Calculate the edge of the cube if its volume is 1331 cm^3.
3. The curved surface area of a cone is 12320 sq. cm, if the radius of its base is 56 cm, find its height.
4. Two cubes of edge 6 cm are joined to form a cuboid. Find the total surface area of the cuboid.
5. A metallic sphere is of radius 4.9 cm. If the density of the metal is 7.8 g/cm^2, find the mass of the sphere ($\pi = 22/7$).
6. The volume of a solid hemisphere is 1152 π cm^3. Find its curved surface area.
7. Find the diameter of a cylinder whose height is 5 cm and numerical value of volume is equal to numerical value of curved surface area.
8. In a cylinder, if radius is halved and height is doubled, then find the volume with respect to original volume.
9. A spherical ball is divided into two equal halves. If the curved surface area of each half is 56.57 cm, find the volume of the spherical ball. [use $\pi = 3.14$]
10. Find the capacity in litres of a conical vessel having height 8 cm and slant height 10 cm.
11. Calculate the surface area of a hemispherical dome of a temple with radius 14 m to be whitewashed from outside.
12. A rectangular piece of paper is 22 cm long and 10 cm wide. A cylinder is formed by rolling the paper along its length. Find the volume of the cylinder.
13. A heap of wheat is in the form of a cone whose diameter is 10.5 m and height is 3 m. Find it volume. If $1m^3$ wheat cost is ₹10, then find total cost.
14. A cylindrical vessel can hold 154 g of water. If the radius of its base is 3.5 cm, and$1cm^3$ of water weighs 1 g, find the depth of water.
15. A wall of length 10 m is to be built across an open ground. The height of the wall is 5 m and thickness of the wall is 42 cm. If this wall is to be built with brick of dimensions 42 cm × 12 cm × 10 cm, then how many bricks would be required?
16. The volume of cylindrical pipe is 748 cm. Its length is 0.14 m and its internal radius is 0.09 m. Find thickness of pipe.
17. The curved surface area of a cylinder is 154 cm. The total surface area of the cylinder is three times its curved surface area. Find the volume of the cylinder.
18. A right-angled ΔABC with sides 3 cm, 4 cm and 5 cm is revolved about the fixed side of 4 cm. Find the volume of the solid generated. Also, find the total surface area of the solid.

19. A semicircular sheet of metal of radius 14 cm is bent to form an open conical cup. Find the capacity of the cup.

20. It costs ₹3300 to paint the inner curved surface of a 10 m deep well. If the rate cost of painting is of ₹30 per m^2, find :
    (a) inner curved surface area
    (b) diameter of the well
    (c) capacity of the well.

21. Using clay, Anant made a right circular cone of height 48 cm and base radius 12 cm. Versha reshapes it in the form of a sphere. Find the radius and curved surface area of the sphere so formed.

22. A dome of a building is in the form of a hemisphere. From inside, it was whitewashed at the cost of ₹498.96. If the rate of whitewashing is ₹4 per square metre, find the :
    (i) Inside surface area of the dome
    (ii) Volume of the air inside the dome.

23. A right triangle ABC with sides 5 cm, 12 cm and 13 cm is revolved about the side 5 cm. Find the volume of the solid so obtained. If it is now revolved about the side 12 cm, then what would be the ratio of the volumes of the two solids obtained in two cases ?

24. A right triangle of hypotenuse 13 cm and one of its sides 12 cm is made to revolve taking side 12 cm as its axis. Find the volume and curved surface area of the solid so formed.

25. Each edge of a cube is increased by 50%. Find the percentage increase in the surface area of the cube.

26. A rectangular tank is 225 m × 162 m at base. With what speed should water flow into it through an aperture 60 cm × 45 cm so that the level of water is raised by 20 cm in 2.5 hours?

27. To maintain beauty of a monument, the students of the school cleaned and painted the dome of the monument. The monument is in the form of a hemisphere. From inside, it was white washed by the students whose area is 249.48 m^2.
    (a) Find the volume of the air inside the dome. If white washing costs ₹2 per m^2, how much does it costs ?
    (b) Which value is depicted by the students? ($\pi = 227$)

28. Salim provides water to a village, having a population of 4000 which requires 150 litres of water per head per day. He has storage tank measuring 20 m × 15 m × 6 m. For how many days will the water of his tank last? He increased the rate for providing water as the dependence of villagers increased on him. Which value is depicted by Salim?