

SURFACE AREAS AND VOLUMES

CM091101

Multiple Choice Questions :

1 mark each

- The radius of a sphere and the edge of a cube are equal. The ratio of their volumes is :
(a) $4\pi : 3$ (b) $4 : 3$ (c) $3 : 4$ (d) $4\pi : 1$
- The height (h) of a cone is equal to its base diameter (2 r). The slant height of the cone is :
(a) $\sqrt{r^2 + h^2}$ (b) $r\sqrt{5}$ (c) $h\sqrt{5}$ (d) $rh\sqrt{5}$
- Five cubes each of edge 1 cm are joined face to face. The surface area of the cuboid thus formed is :
(a) 5 cm^2 (b) 10 cm^2 (c) 11 cm^2 (d) 22 cm^2
- In a cylinder, radius is doubled and height is halved, its curved surface area will be :
(a) halved (b) doubled (c) same (d) four times
- The number of 4 cm cubes which can be cut from a solid cube whose edge is 32 cm, is :
(a) 8 (b) 64 (c) 256 (d) 512

Very Short Answer Type Questions :

2 marks each

- A sphere is inscribed in a cube. Find the ratio of the volume of the cube to the volume of the sphere.
- In a conical vessel of radius 8.4 m and vertical height 3.5 m, how many full bags of wheat can be emptied, if space for wheat in each bag is 1.96 m^3 ? $\left[\pi = \frac{22}{7}\right]$
- Three spheres of radii 3 cm, 4 cm and 5 cm are melted together to form a single sphere. Find the radius of new sphere.

Short Answer Type Questions :

3 marks each

- Three cubes are placed adjacent to each other in a row. Find the ratio of the total surface area of the cuboid thus formed to the sum of the surface areas of the three cubes.
- The surface area of a sphere of radius 5 cm is five times the area of curved surface of a cone of radius 4 cm. Find the height and volume of cone. $\left[\pi = \frac{22}{7}\right]$
- An open cylindrical vessel has base diameter 14 cm and height 21 cm. Find the cost of tin plating its inner surface area at the rate of Rs 3 per 10 cm^2 .

Long Answer Type Questions :

5 marks each

- A dome of a building is in the form of a hemisphere. From inside, it was white-washed at the cost of Rs 498.96. If the cost of white-washing is Rs 2.00 per square metre, find the following:

(i) inside surface area of the dome.

(ii) volume of the air inside the dome.

13. A corn cob, sharpened like cone has the radius of the base as 2.1 cm and height as 20 cm. If each 1 sq. cm of the surface of cob carries an average of 4 grains, find how many grains you would find in the entire cob?

