

Multiple Choice Questions

(1 mark each)

- A circus tent is cylindrical up to a height of 4 m and conical above it. If its diameter is 105 m and its slant height is 40 m, then the total area of canvas required to built the tent is

(a) 7920 m^2 (b) 7820 m^2
(c) 9720 m^2 (d) 2645 m^2
- The lateral surface area of a cylinder is 176 cm^2 and base area 38.5 cm^2 . The volume of the cylinder is

(a) 308 cm^3 (b) 830 cm^3
(c) 803 cm^3 (d) None of these
- A cylindrical vessel contains 49.896 L of liquid. Cost of painting its CSA at 2 paise/sq cm is ₹ 95.04. Then, its total surface area is

(a) 5724 cm^2 (b) 7524 cm^2
(c) 5742 cm^2 (d) None of these
- Two cones have their heights in the ratio 2 : 3 and radii in the ratio 5 : 2. The ratio of their volumes is

(a) $\frac{25}{6}$ (b) $\frac{5}{3}$ (c) $\frac{5}{6}$ (d) $\frac{25}{3}$

Short Answer Type (I) Questions

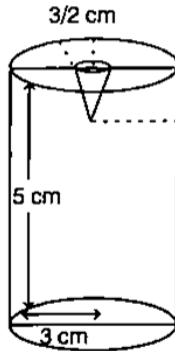
(2 marks each)

- From a solid cube of side 7 cm, a conical cavity of height 7 cm and radius 3 cm is hollowed out. Find the volume of the remaining solid.
- A cylinder whose height is equal to its diameter, has the same volume as a sphere of radius 2 cm. Calculate the cube of radius to the base of the cylinder correct to one decimal place.
- How many shots each having diameter 3 cm can be made from a cuboidal lead solid of dimensions $9 \text{ cm} \times 11 \text{ cm} \times 12 \text{ cm}$?
- A toy is in the form of a cone mounted on a hemisphere of diameter 7 cm. The height of the toy is 14.5 cm. Find the volume of the toy.
- The rain water from a roof $22 \text{ m} \times 20 \text{ m}$ drain into a conical vessel having diameter of base as 2 m and height 3.5 m. If the vessel is just full, then find the rainfall.
- Two cubes each of 8cm edge are joined end-to-end. Find the surface area of the resulting cuboid.

Short Answer Type (II) Questions

(3 marks each)

11. A metallic cylinder has radius 3 cm and height 5 cm. It is made of metal *A*. To reduce its weight, a conical hole is drilled in the cylinder, as shown and it is completely filled with a lighter metal *B*. The conical hole has a radius of $\frac{3}{2}$ cm and its depth is $\frac{8}{9}$ cm. Calculate the ratio of the volume of the metal *A* to the volume of the metal *B* in the solid.



12. A vessel is in the form of a hollow hemisphere mounted by a hollow cylinder. The diameter of the hemisphere is 14 cm and the total height of the vessel is 13 cm. Find the inner surface area of the vessel.
13. A copper wire 4 mm in diameter is evenly wound about a cylinder whose length is 24 cm and diameter 20 cm, so as to cover the whole surface. Find the length and weight of the wire assuming the specific density to be 8.88 gm/cm^3 .
14. A metal cube of 9 cm edge is melted and recast into three smaller cubes. If the edge of two of the smaller cubes are 1 cm and 6 cm. Find the edge of the third cube.

Long Answer Type Questions

(5 marks each)

15. A solid toy is in the form of a hemisphere surmounted by a right circular cone. Height of the cone is 3 cm and the diameter of the base is 5 cm. If a right circular cylinder circumscribes the solid, then find how much more space it will require.
16. A building is in the form of a cylinder surmounted by a hemispherical vaulted dome which contains 17.7 m^3 of air and its internal diameter is equal to the height of the crown of the vault above the floor. Find the height of the building. [take, $\pi = \frac{22}{7}$]

Answers

1. (a) 2. (a) 3. (b) 4. (a)
5. 277 cm^3 6. 5.3 cm^3 7. 84 8. 231 cm^2
9. 0.83 cm 10. 640 cm^2 11. 66.5:1 12. 572 cm^2 13. 4.21 kg
14. 8 cm 15. $17.705 \pi \text{ cm}^3$ 16. 3 m (approx)

For Solution
scan QR code



