

Comprehensive Test Series-05

Surface areas and volumes

TIME: 1.5 hr.

MM: 50

General Instructions:

- All Questions are compulsory.
- Each question carries 3 marks
- Use of calculator is not permitted.

1. A river 3 m deep and 40 m wide is flowing at the rate of 2 km per hour. How much water will fall into the seaw in a minute?
2. A village having a population of 4000, requires 150 litres of water per head per day. It has a tank measuring $20\text{ m} \times 15\text{ m} \times 6\text{ m}$. For how many days will the water of this tank last?
3. A capacity of a cuboidal tank is 50000 litres of water. Find the breadth of the tank, if its length and depth are respectively 2.5 m and 10m .
4. A cuboidal vessel is 10 m long and 8 m wide. How high must it be made to hold 380 cubic metres of a liquid?
5. A capacity of a closed cylindrical vessel of height 1 m is 15.4 litres. How many square metres of metal sheet would be needed to make it?
6. It costs Rs. 2200 to paint the inner curved surface of a cylindrical vessel 10 m leep. If the cost of paintingf is at the rate of Rs. 20 per m^2 find
 - (i) inner curved surface area of vessel,
 - (ii) radius of the base
 - (iii) capacity of the vessel
7. The inner diameter of a cylindrical wooden pipe is 24 cm and its outer diameter is 28 c. The length of the pipe is 35 c. Find the mass of the pipe, if 1 cm^3 of wood has a mass of 0.6 g.
8. The height of a cone is 15 cm. If its volume is 1570 cm^3 find the radius of the base. (Use $\pi = 3.14$)
9. If the volume of a right circular cone of height 9 cm. is $48\pi\text{ cm}^3$, find the diameter of its base.
10. The volume of a right circular cone is 9856 cm^3 . If the diameter of the base is 28 c., find
 - (i) height of the cone
 - (ii) slant height of the cone
 - (iii) curved surface area of the cone
11. A right triangle ABC with sides 5 cm, 12 cm, and 13 cm, is revolved about the side 12 cm. Find the volume of the solid so obtained.
12. The diameter of a metallic ball is 4.2 cm. What is the mass of the ball, if the densisty of the metal is 8.9 g per cm^3 ?
13. How many litres of milk can a hemispherical bowl of diameter 10.5 cm. hold?
14. Find the volume of a sphere whose surface area is 154 cm^2 .
15. A dome of a building is in the form of a hemispher. 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
 - (i) inside surface area of the dome,
 - (ii) volume of the air inside of dome.