WORKSHEET 13

CHAPTER 13 – SURFACE AREAS AND VOLUMES

1. The total surface area of a cube is 96 cm². The volume of the cube is
   (a) 32 cm²   (b) 64 cm²   (c) 24 cm²   (d) 216 cm²

2. Slant height of a cone is 34 cm and base diameter is 32 cm, then height of the cone is
   (a) 30 cm   (b) 25 cm   (c) 28 cm   (d) 60 cm

3. The radii of two cylinders are in the ratio of 2 : 3 and their heights are in the ratio 5 : 3. The ratio of their volume is
   (a) 15 : 20   (b) 10 : 17   (c) 15 : 17   (d) 17 : 15

4. The diameter of sphere is decreased by 25%. By what per cent its volume decreases?
   (a) 50%   (b) 44%   (c) 43.75%   (d) 48%

5. Number of surfaces of the same area in a cuboid are
   (a) 4   (b) 2   (c) 6   (d) 12

6. Diagonal of a cube is $\sqrt{6}$ cm. What is its lateral surface area?
   (a) 64 cm²   (b) 12 cm²   (c) 8 cm²   (d) 16 cm²

7. Ratio of the volume of a cone and a cylinder of same radius of base and same height is
   (a) 1 : 3   (b) 2 : 3   (c) 1 : 1   (d) 5 : 3

8. A cylinder is 3 m high and circumference of its base is 22 m. Find its curved surface area.

9. Find the length of the longest rod that can be placed in a room of dimensions 30 m × 24 m × 18 m.

10. A hemisphere of lead of radius 7 cm is cast into a right circular cone of height 49 cm. Find the radius of the base of the cone.

11. Volume of a cube of 5832 m³. Find the cost of painting its total surface area at the rate of ₹ 3.50 per m².

12. A shopkeeper has one spherical ladoo of radius 5 cm. With the same amount of material, how many ladoos of radius 2.5 cm can be made?

13. A cone of height 24 cm has a curved surface area of 550 cm². Find its volume.

14. A cube of side 4 cm contains a sphere touching its sides. Find the volume of the gap in between.

15. If the volume of a sphere is divided by its surface area, the result is 27 cm. Find the diameter of the sphere.

16. The volumes of the two spheres are in the ratio 64 : 27. Find the ratio of their surface areas.

17. The surface area of a sphere is the same as the curved surface area of a cone having the radius of the base as 150 cm and height 360 cm. Find the radius of the sphere.

18. The radius of a spherical balloon increases from 7 cm to 14 cm as air is being pumped into it. Find the ratio of surface areas of the balloon in the two cases.

19. The external and internal diameters of a hollow hemispherical vessel are 12 cm and 10 cm respectively. The cost of painting is ₹ 2 per sq. m, find the cost of painting the vessel all over.

20. A semi-circular sheet of metal of diameter 28 cm is bent to form an open conical cup. Find the capacity of the cup.

Name: ....   Teacher's signature: ....

Class: ....IX..   Date: ....

ANSWERS

1. (*b*) 64 cm^2 2. (*a*) 30 cm   3. (*b*) 10 : 17   4. (*c*) 43.75%   5. (*b*) 2   6. (*c*) 8 cm^2 7. (*a*) 1 : 3

8. CSA = 66 m^2 9. 96.28 cm^2 10. 3.74 cm   11. ₹ 6804   12. 8   13. 1232 cm^2

14. 30.48 cm^3 15. 162 cm   16. 16 : 9   17. 120.93 cm (approx.)   18. 1 : 4

19. ₹ 835.24   20. 622.16 cm^3.