1. Find the surface area of a sphere of radius 5.6 cm.
2. The surface area of sphere is 5544 cm². Find its volume. (Use $\pi = 22/7$)
3. The ratio of the diameters of the earth and moon is 100 to 27. How many times the area of the earth is greater than the moon? Give your answer correct to two significant figures.
4. A hollow sphere of internal and external diameters 14 cm and 18 cm respectively is melted into a cone of base diameter 8 cm. Find the height of the cone.
5. Two spheres have their volumes in the ratio of 1728 : 2197. If the area of the smaller sphere is 3024 cm², find the area of the bigger sphere.
6. (i) The volume of a sphere is $905\frac{1}{7}$ cm³. Find its radius.   [CBSE 2011]

   (ii) The radius of a spherical balloon is inflated from 1.5 cm to 2.5 cm by pumping more air to it. Find the ratio of surface area of resulting balloon to the original balloon.
      [CBSE 2011]
7. A solid block of metal 49 cm by 44 cm by 18 cm is melted and formed into a solid sphere. Calculate the radius of the sphere.
8. A sphere of radius r has the same volume as that of a cone with a circular base radius r. Find the height of the cone.
9. The cylinder whose height is equal to its diameters has the same volume as a sphere of radius 4 cm. Calculate the radius of the base of the cylinder to one decimal place.
10. Three spheres of radii 3 cm, 4 cm and 5 cm are melted together to form a single sphere. Find the radius of the new sphere.

      [CBSE Sample Paper 2013]

11. The diameter of a copper sphere is 6 cm. The sphere is melted and is drawn into a long wire of uniform circular cross section. If the length of the wire is 36 cm, find its radius.
12. A sphere of radius 42 cm is melted and recast into a cuboid whose dimensions are in the ratio 49 : 44 : 18. Find the actual dimensions of the cuboid.
13. The diameter of a sphere is 42 cm. It is melted and drawn into a cylindrical wire of diameter 28 cm. Find the length of the wire.
14. A solid sphere of radius 3 cm is melted and then the cast into small spherical balls each of diameter 0.6 cm. Find the number of such balls.
15. A hemispherical dome of a building is to be white washed and the total cost of white wash of dome building is ₹ 924 at the rate of ₹ 3 per m², then find the

      (i) the surface area of the hemisphere.

      (ii) volume of air in the dome.
      [CBSE 2011]
16. A hollow sphere with internal and external radii of 2 cm and 4 cm respectively is melted into a cone of base radius 4 cm. Find the height of the cone.

17. Find the curved surface area and the total surface area of a hemisphere of diameter 10 cm. [Take $\pi = 3.142$]

18. The outer and inner diameters of a hemispherical bowl are 17cm and 15 cm respectively, find the cost of polishing it over at 25 paise per cm^2

[Use $\pi = 22/7$]

19. (i) If the diameters of two spheres are in the ratio $2 : 3$, find the ratio of their surface areas.

(ii) If the areas of the two spheres are in the ratio $4 : 9$, find the ratio of their volumes.

20. A hemispherical bowl of internal radius 15 cm contains a liquid. The liquid is to be filled into a cylindrical bottles of diameter 5 cm and height 6 cm. How many bottles are necessary to empty the bowl.

Answers

1. $394.24\ cm^2$ 2. $38808\ cm^3$ 3. 14 times bigger   4. 96.5 cm
5. $3549\ cm^2$ 6. (i) 6 cm   (ii) $25 : 9$ 7. 21 cm
8. $4\ r$ 9. 3.5 cm   10. 6 cm   11. 1 cm
12. 98 cm, 88 cm, 36 cm   13. 63 cm   14. 1000

15. (i) $308\ m^2$ (ii) $718\frac{2}{3}\ m^3$ 16. 14 cm

17. $157.1\ cm^2$, $235.71\ cm^2$ 18. ₹ 199.43
19. (i) $4 : 9$ (ii) $8 : 27$ 20. 60

Teach san ban