MATHS
CLASS X
7. Mensuration

1. The curved surface area of a right circular cone of height 15 *cm* and base diameter 16 *cm* is

(1) $60\pi\ cm^2$ (2) $66\pi\ cm^2$ (3) $120\pi\ cm^2$ (4) $136\pi\ cm^2$

2. If S_1 denotes the total surface area of a sphere of radius r and S_2 denotes the total surface area of a cylinder of base radius r and height $2r$, then

(1) $S_1 = S_2$ (2) $S_1 > S_2$ (3) $S_1 < S_2$ (4) $S_1 = 2S_2$

3. The ratio of the volumes of two spheres is 8:27. If r and R are the radii of spheres respectively, then $(R-r):r$ is

(1) 1:2 (2) 1:3 (3) 2:3 (4) 4:9

4. The radius of a wire is decreased to one-third of the original. If volume remains the same, then the length will be increased _____ of the original.

(1) 3 times (2) 6 times (3) 9 times (4) 27 times

5. The height of a cone is 60 *cm*. A small cone is cut off at the top by a plane parallel to the base and its volume is $\left(\frac{1}{64}\right)^{th}$ the volume the original cone. The height of the smaller cone is

(1) 45 *cm* (2) 30 *cm* (3) 15 *cm* (4) 20 *cm*

6. A solid frustum is of height 8 *cm*. If the radii of its lower and upper ends are 3 *cm* and 9 *cm* respectively, then its slant height is

(1) 15 *cm* (2) 12 *cm* (3) 10 *cm* (4) 17 *cm*

7. A solid is hemispherical at the bottom and conical above. If the curved surface areas of the two parts are equal, then the ratio of its radius and the height of its conical part is

(1) 1:3 (2) $1:\sqrt{3}$ (3) 1:1 (4) $\sqrt{3}:1$

8. The material of a cone is converted into the shape of a cylinder of equal radius. If the height of the cylinder is 5 *cm*, then height of the cone is

(1) 10 *cm* (2) 15 *cm* (3) 18 *cm* (4) 24 *cm*

9. The curved surface area of a cylinder is $264\,m^2$ and its volume is $924\,m^3$. The ratio of diameter to its height is

(1) 3:7 (2) 7:3 (3) 6:7 (4) 7:6

10. When Karuna divided surface area of a sphere by the sphere's volume, he got the answer as $\frac{1}{3}$. What is the radius of the sphere?

(1) 24 *cm* (2) 6 *cm* (3) 54 *cm* (4) 4.5 *cm*

11. A spherical steel ball is melted to make 8 new identical balls. Then the radius each new ball is how much times the radius of the original ball?

(1) $\frac{1}{3}$ (2) $\frac{1}{4}$ (3) $\frac{1}{2}$ (4) $\frac{1}{8}$

12. A semicircular thin sheet of a metal of diameter 28 *cm* is bent and an open conical cup is made. What is the capacity of the cup?

(1) $\left(\frac{1000}{3}\right)\sqrt{3}\ cm^3$ (2) $300\sqrt{3}\ cm^3$

(3) $\left(\frac{700}{3}\right)\sqrt{3}\ cm^3$ (4) $\left(\frac{1078}{3}\right)\sqrt{3}\ cm^3$

13. A cone of height 9 *cm* with diameter of its base 18 *cm* is carved out from a wooden solid sphere of radius 9 *cm*. The percentage of wood wasted is

(1) 45% (2) 56% (3) 67% (4) 75%

14. A cylinder having radius 1 *m* and height 5 *m* is completely filled with milk. In how many conical flasks can this milk be filled if the flask radius and height is 50 *cm* each?

(1) 50 (2) 500 (3) 120 (4) 160

15. A floating boat having a length 3 *m* and breadth 2 *m* is floating on a lake. The boat sinks by 1 *cm* when a man gets into it. The mass of the man is (density of water is 1000 kg/m^3)

(1) 50 *kg* (2) 60 *kg* (3) 70 *kg* (4) 80 *kg*