

Multiple-Choice Questions

1. If the radius, r of a sphere is reduced to its half, then the new volume would be

(a) $\frac{1}{2} \left(\frac{4}{3} \pi r^3 \right)$

(b) $\frac{4\pi}{3} \left(\frac{r^3}{8} \right)$

(c) $\frac{4}{3} \pi \frac{r^3}{2}$

(d) $\frac{4}{6} \pi \frac{r^3}{8}$

2. If the ratio of the radii of bases of two cones is $3 : 1$ and the ratio of their heights is $1 : 3$, then the ratio of their volume is

(a) $1 : 2$

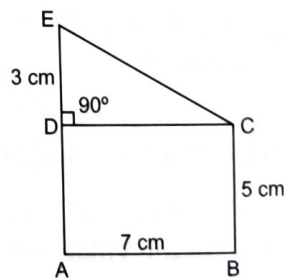
(b) $2 : 1$

(c) $1 : 3$

(d) $3 : 1$

3. If the circumference of the base of a 18 m high conical tent is 66 m, then the volume of air contained in it is

- (a) 2079 m^3 (b) 2541 m^3
 (c) 3969 m^3 (d) 4851 m^3
4. The thickness of a hemispherical bowl made of steel is 0.25 cm. If the inner radius of the bowl is 3.25 cm, then the outer curved surface area of the bowl is
 (a) 38.5 cm^2 (b) 77 cm^2
 (c) 115.5 cm^2 (d) 154 cm^2
5. ABC is a right-angled triangle with $AB = 14 \text{ cm}$, $BC = 48 \text{ cm}$ and $\angle ABC = 90^\circ$. This triangle is turned around the shorter side so as to form a cone of volume $V_1 \text{ cm}^3$. The triangle is now turned around the longer side to form another cone of volume $V_2 \text{ cm}^3$. Then the $V_1 : V_2$ is equal to
 (a) 1 : 1 (b) 24 : 7
 (c) 7 : 24 (d) 12 : 7
6. An isosceles right-angled triangle, each equal side of length 5 cm, is turned around the hypotenuse so as to form a double cone. The volume of this combined cone is
 (a) $\frac{125\sqrt{2}}{3} \text{ cm}^3$ (b) $\frac{125\sqrt{2}\pi}{3} \text{ cm}^3$
 (c) $\frac{125\sqrt{2}}{6} \text{ cm}^3$ (d) $\frac{125\sqrt{2}\pi}{6} \text{ cm}^3$
7. If the radius and the slant height of a cone are in the ratio 7 : 13 and its curved surface area is 286 cm^2 , then its radius is
 (a) 7 cm (b) 7.5 cm
 (c) 10 cm (d) 10.5 cm
8. ABCD is a rectangle with $AB = 7 \text{ cm}$ and $BC = 5 \text{ cm}$ and $\triangle EDC$ is a right-angled triangle where E is a point on AD produced such that $DE = 3 \text{ cm}$ and $\angle EDC = 90^\circ$ as shown in the figure. The combined plane figure ABCE is now revolved around AE so as to form a combined solid figure. The volume of this combined solid is



- (a) 850 cm^3 (b) 924 cm^3
 (c) 900 cm^3 (d) 890 cm^3

9. If each bag containing wheat occupies 2.2 m^3 of space, then the number of full bags which can be emptied into a conical drum of radius 6 m and height 3.5 m is
- (a) 90 (b) 70
(c) 80 (d) 60
10. A conical pandal 350 m in radius and 120 m high is made of cloth which is 220 m wide. Then the length of the cloth used to make the pandal is
- (a) 1850 m (b) 1800 m
(c) 1875 m (d) 1900 m