EduSahara™ Assignment

Name : Conversion of Solid from One Shape to Another

Chapter : Mensuration

Grade : SSC Grade X

1. The height of a right circular cone is 27.00 cm and the radius of its base is 3.50 cm. It is melted and recast into a right circular cone with base radius 2.80 cm. Find the new height

   (i) 39.19 cm (ii) 42.19 cm (iii) 37.19 cm (iv) 47.19 cm (v) 45.19 cm

2. A solid metallic cylinder of base radius 5.50 cm and height 13.00 cm is melted to form cones each of height 1.00 cm and radius 1.00 cm . Find the number of complete cones formed

   (i) 1129 (ii) 1179 (iii) 1399 (iv) 1249 (v) 1019

3. A conical vessel, whose internal radius is 8.50 cm and height 6.00 cm, is full of liquid . Its contents are emptied into a cylindrical vessel with internal radius 5.00 cm. Find the height to which the liquid rises in the cylindrical vessel.

   (i) 6.78 cm (ii) 3.78 cm (iii) 7.78 cm (iv) 5.78 cm (v) 4.78 cm

4. A hollow metallic cylindrical tube has an internal radius of 5.00 cm and height 29.00 cm. The thickness of the metal is 4 cm .The tube is melted to cast into a right circular cone of height 20.00 cm. Find the radius of the cone.

   (i) 18.61 cm (ii) 10.61 cm (iii) 15.61 cm (iv) 20.61 cm (v) 12.61 cm

5. An open cylindrical vessel of internal diameter 14.00 cm and height 16.00 cm stands on a horizontal table. Inside this is placed a solid metallic right circular cone, the diameter of whose base is 7.00 cm and height 16.00 cm and filled with water. If the cone is replaced by another cone whose height is 9.60 cm and base radius is 2.45 cm, find the drop in the water level.

   (i) 7.94 cm (ii) 0.94 cm (iii) 8.94 cm (iv) 1.94 cm (v) 2.94 cm

6. The surface area of a solid metallic sphere is 2828.57 sq.cm. It is melted and recasted into solid right circular cones of radius 7.50 cm and height 10.50 cm . Find the number of complete cones that can be made

   (i) 22 (ii) 25 (iii) 19 (iv) 27 (v) 17

7. A hollow sphere of internal and external diameters 40.00 cm and 44.00 cm respectively is melted into a cone of base diameter 24.00 cm. Find the height of the cone

   (i) 70.56 cm (ii) 68.56 cm (iii) 76.56 cm (iv) 78.56 cm (v) 73.56 cm

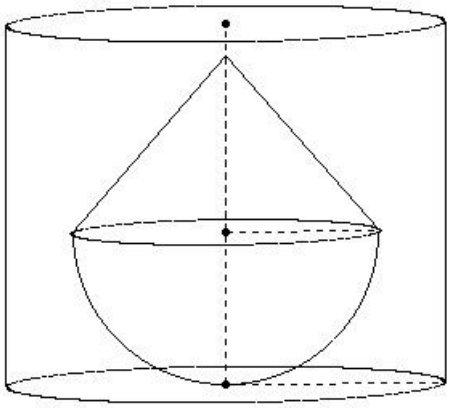
8. A cylindrical vessel of base radius 19.00 cm contains water . A solid sphere of radius 13.00 cm is immersed completely in the water. Find the rise in the water level in the vessel

   (i) 9.11 cm (ii) 10.11 cm (iii) 7.11 cm (iv) 6.11 cm (v) 8.11 cm

9. Marbles of diameter 2.00 cm are dropped into a cylindrical beaker containing some water. When they are fully submerged, the water level rises by 16 cm. If the diameter of the beaker is 12.00 cm, find the number of marbles that are dropped in it

   (i) 415 (ii) 427 (iii) 456 (iv) 432 (v) 449

10. A solid consisting of a right circular cone, standing on a hemisphere is placed upright, in a right circular cylinder full of water and touches the bottom. The radius of the cylinder is 13.50 cm and height is 22.50 cm. The radius of the hemisphere is 9.50 cm and the height of the cone is 11.00 cm. Find the volume of water left in the cylinder.



(i) 10051.25 cu.cm (ii) 12351.25 cu.cm (iii) 10351.25 cu.cm (iv) 7851.25 cu.cm (v) 9851.25 cu.cm

11. A conical vessel of radius 10.00 cm and height 24.00 cm is completely filled with water. A sphere is lowered into the water and its size is such that when it touches the sides, it is just immersed. Find the fraction of the water that overflows

(i) $\frac{14}{27}$ (ii) $\frac{38}{81}$ (iii) $\frac{40}{81}$ (iv) $\frac{40}{83}$ (v) $\frac{40}{79}$

12. A metallic sphere of radius 10.00 cm is melted to recast into the shape of a cylinder of radius 12.00 cm . Find the height of the cylinder.

(i) 11.26 cm (ii) 10.26 cm (iii) 9.26 cm (iv) 8.26 cm (v) 7.26 cm

13. Metallic spheres of radii 14.00 cm, 13.00 cm are melted to form a single solid sphere. Find the radius of the resulting sphere.

(i) 4941 cm (ii) $\sqrt[5]{4941}$ cm (iii) $\sqrt[3]{4941}$ cm (iv) $\sqrt[3]{4943}$ cm (v) $\sqrt[3]{4939}$ cm

14. A well of diameter 12.00 m is dug to a depth of 12.00 m and the soil from digging is evenly spread out to form a platform of base dimensions 20.00 m×18.00 m . Find the height of the platform

(i) 3.77 m (ii) 2.77 m (iii) 4.77 m (iv) 1.77 m (v) 5.77 m

15. A well of diameter 19.00 m is dug to a depth of 11.00 m . The soil taken out of it has been spread evenly all around it in the shape of a circular ring of width 5m to form an embankment. Find the height of the embankment.

(i) 7.27 m (ii) 6.27 m (iii) 10.27 m (iv) 8.27 m (v) 9.27 m

16. An ice cream container has the shape of a right circular cylinder having inner diameter 28.00 cm and height 32.00 cm . The ice cream is filled into cones of diameter 20.00 cm and height 16.00 cm , having a hemispherical shape on the top. Find the number of such complete cones which can be filled with ice cream

(i) 5 (ii) 4 (iii) 6 (iv) 7 (v) 3

17. A cylinder with radius 7.00 cm and height 6.00 cm is melted to recast into a cone of height 24.50 cm. Find the radius of the cone.

(i) 8.00 cm (ii) 5.00 cm (iii) 6.00 cm (iv) 7.00 cm (v) 4.00 cm

18. A copper sphere having a radius of 8.00 cm is melted and drawn into a cylindrical wire of radius 0.20 cm. Calculate the length of the wire.

(i) 155.67 m (ii) 186.67 m (iii) 170.67 m (iv) 187.67 m (v) 157.67 m

19. A copper rod of diameter 0.80 cm and length 4.00 cm is drawn into a wire of length 31.36 m of uniform thickness. Find the thickness of the wire.

(i) $\frac{1}{35}$ cm (ii) $\frac{2}{35}$ cm (iii) 0 cm (iv) $\frac{1}{70}$ cm (v) $\frac{3}{70}$ cm

Assignment Key

1) (ii)	2) (ii)	3) (iv)	4) (iii)	5) (ii)	6) (i)
7) (v)	8) (v)	9) (iv)	10) (i)	11) (iii)	12) (iii)
13) (iii)	14) (i)	15) (iv)	16) (i)	17) (iii)	18) (iii)
19) (iv)					