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 11.00 cm and the radius of its base is 10.50 cm. It is melted and recast into a right circular cone with base radius 7.35 cm. Find the new height

   (i) 19.45 cm (ii) 25.45 cm (iii) 27.45 cm (iv) 17.45 cm (v) 22.45 cm

2. A solid metallic cylinder of base radius 14.00 cm and height 20.00 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) 13460 (ii) 12060 (iii) 11760 (iv) 9260 (v) 11360

3. A conical vessel, whose internal radius is 3.50 cm and height 27.00 cm, is full of liquid . Its contents are emptied into a cylindrical vessel with internal radius 2.00 cm. Find the height to which the liquid rises in the cylindrical vessel.

   (i) 24.56 cm (ii) 27.56 cm (iii) 30.56 cm (iv) 22.56 cm (v) 32.56 cm

4. A hollow metallic cylindrical tube has an internal radius of 12.50 cm and height 21.00 cm. The thickness of the metal is 3 cm .The tube is melted to cast into a right circular cone of height 8.00 cm. Find the radius of the cone.

   (i) 25.72 cm (ii) 30.72 cm (iii) 22.72 cm (iv) 28.72 cm (v) 20.72 cm

5. An open cylindrical vessel of internal diameter 28.00 cm and height 17.00 cm stands on a horizontal table. Inside this is placed a solid metallic right circular cone, the diameter of whose base is 14.00 cm and height 17.00 cm and filled with water. If the cone is replaced by another cone whose height is 8.50 cm and base radius is 3.50 cm, find the drop in the water level.

   (i) 1.24 cm (ii) 0.24 cm (iii) 2.24 cm (iv) 9.24 cm (v) 3.24 cm

6. The surface area of a solid metallic sphere is 10572.57 sq.cm. It is melted and recasted into solid right circular cones of radius 20.30 cm and height 14.50 cm . Find the number of complete cones that can be made

   (i) 19 (ii) 13 (iii) 11 (iv) 21 (v) 16

7. A hollow sphere of internal and external diameters 20.00 cm and 26.00 cm respectively is melted into a cone of base diameter 14.00 cm. Find the height of the cone

   (i) 102.71 cm (ii) 94.71 cm (iii) 97.71 cm (iv) 100.71 cm (v) 92.71 cm

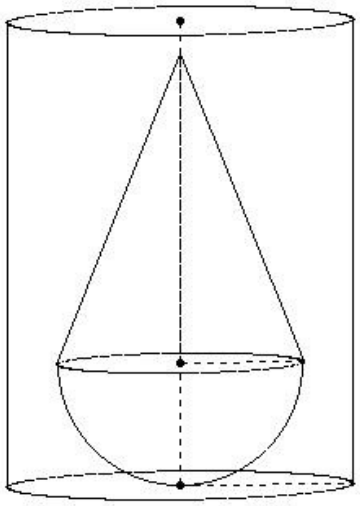
8. A cylindrical vessel of base radius 23.00 cm contains water . A solid sphere of radius 18.00 cm is immersed completely in the water. Find the rise in the water level in the vessel

   (i) 17.70 cm (ii) 9.70 cm (iii) 11.70 cm (iv) 14.70 cm (v) 19.70 cm

9. Marbles of diameter 1.40 cm are dropped into a cylindrical beaker containing some water. When they are fully submerged, the water level rises by 2.8 cm. If the diameter of the beaker is 8.40 cm, find the number of marbles that are dropped in it

   (i) 83 (ii) 132 (iii) 110 (iv) 95 (v) 108

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 10.50 cm and height is 28.50 cm. The radius of the hemisphere is 7.50 cm and the height of the cone is 19.00 cm. Find the volume of water left in the cylinder.



(i) 7631.68 cu.cm (ii) 8151.68 cu.cm (iii) 7901.68 cu.cm (iv) 7721.68 cu.cm (v) 7871.68 cu.cm

11. A conical vessel of radius 8.00 cm and height 15.00 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) $\frac{55296}{119998}$ (ii) $\frac{55296}{120002}$ (iii) $\frac{55294}{120000}$ (iv) $\frac{55298}{120000}$ (v) $\frac{55296}{120000}$

12. A metallic sphere of radius 19.00 cm is melted to recast into the shape of a cylinder of radius 21.00 cm . Find the height of the cylinder.

(i) 23.74 cm (ii) 17.74 cm (iii) 15.74 cm (iv) 20.74 cm (v) 25.74 cm

13. Metallic spheres of radii 6.00 cm, 13.00 cm, 10.00 cm are melted to form a single solid sphere. Find the radius of the resulting sphere.

(i) $\sqrt[3]{3410}$ cm (ii) $\sqrt[3]{3413}$ cm (iii) $\sqrt[5]{3413}$ cm (iv) 3413 cm (v) $\sqrt[3]{3415}$ cm

14. A well of diameter 20.00 m is dug to a depth of 17.00 m and the soil from digging is evenly spread out to form a platform of base dimensions 23.00 m×27.00 m . Find the height of the platform

(i) 8.60 m (ii) 6.60 m (iii) 7.60 m (iv) 10.60 m (v) 9.60 m

15. A well of diameter 13.00 m is dug to a depth of 19.00 m . The soil taken out of it has been spread evenly all around it in the shape of a circular ring of width 11m to form an embankment. Find the height of the embankment.

(i) 5.04 m (ii) 4.04 m (iii) 3.04 m (iv) 2.04 m (v) 1.04 m

16. An ice cream container has the shape of a right circular cylinder having inner diameter 38.00 cm and height 41.00 cm . The ice cream is filled into cones of diameter 17.00 cm and height 12.00 cm , having a hemispherical shape on the top. Find the number of such complete cones which can be filled with ice cream

(i) 24 (ii) 16 (iii) 21 (iv) 26 (v) 18

17. A cylinder with radius 5.00 cm and height 1.00 cm is melted to recast into a cone of height 0.75 cm. Find the radius of the cone.

(i) 10.00 cm (ii) 5.00 cm (iii) 13.00 cm (iv) 7.00 cm (v) 15.00 cm

18. A copper sphere having a radius of 8.00 cm is melted and drawn into a cylindrical wire of radius 0.30 cm. Calculate the length of the wire.

(i) 75.85 m (ii) 80.85 m (iii) 72.85 m (iv) 70.85 m (v) 78.85 m

19. A copper rod of diameter 0.40 cm and length 12.00 cm is drawn into a wire of length 48.00 m of uniform thickness. Find the thickness of the wire.

(i) $\frac{1}{50}$ cm (ii) $\frac{3}{100}$ cm (iii) $\frac{1}{25}$ cm (iv) 0 cm (v) $\frac{1}{100}$ cm

Assignment Key

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