EduSahara™ Learning Center Assignment

Grade : Class X, SSC
Chapter : Mensuration
Name : Volume of a Combination of Solids

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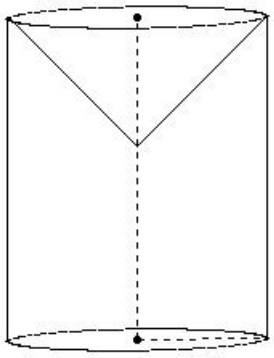
1. From a solid cylinder of height 20.00 cm and base radius 8.00 cm, a conical cavity of height 8.00 cm and base radius 8.00 cm is drilled out. Find the volume of the resulting solid



(i) 3646.48 cu.cm (ii) 3616.48 cu.cm (iii) 3466.48 cu.cm

(iv) 3236.48 cu.cm (v) 3486.48 cu.cm

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2. A conical vessel, whose internal radius is 7.00 cm and height 15.00 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) 64.25 cm (ii) 58.25 cm (iii) 56.25 cm

(iv) 61.25 cm (v) 66.25 cm

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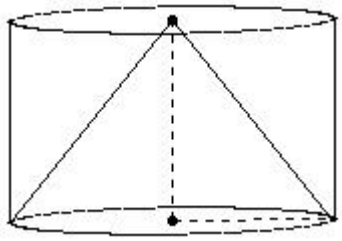
3. From a circular cylinder of diameter 16.00 cm and height 10.00 cm, a conical cavity of the same base radius and of the same height is hollowed out. Find the volume of the remaining solid.



(i) 1340.95 cu.cm (ii) 1410.95 cu.cm (iii) 1490.95 cu.cm

(iv) 1300.95 cu.cm (v) 1100.95 cu.cm

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4. A cone of maximum volume is carved out of a cube of edge 14.00 cm. Find the volume of the remaining material after the cone is carved out

(i) 1965.33 cu.cm (ii) 2165.33 cu.cm (iii) 1775.33 cu.cm

(iv) 2025.33 cu.cm (v) 2045.33 cu.cm

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5. A cone of maximum volume is carved out of a cuboid of dimensions 29.00 cm×29.00 cm×15.00 cm. Find the volume of the remaining material after the cone is carved out

(i) 9451.07 cu.cm (ii) 9311.07 cu.cm (iii) 9041.07 cu.cm

(iv) 9291.07 cu.cm (v) 9361.07 cu.cm

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6. An open cylindrical vessel of internal diameter 15.00 cm and height 21.00 cm stands on a horizontal table. Inside this is placed a solid metallic right circular cone, the diameter of whose base is 7.50 cm and height 21.00 cm and filled with water. If the cone is replaced by another cone whose height is 14.70 cm and base radius is 2.62 cm, find the drop in the water level.

(i) 3.15 cm (ii) 9.15 cm (iii) 0.15 cm

(iv) 1.15 cm (v) 2.15 cm

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7. A cylindrical vessel of base radius 14.00 cm contains water . A solid sphere of radius 12.00 cm is immersed completely in the water. Find the rise in the water level in the vessel

(i) 11.76 cm (ii) 6.76 cm (iii) 16.76 cm

(iv) 8.76 cm (v) 14.76 cm

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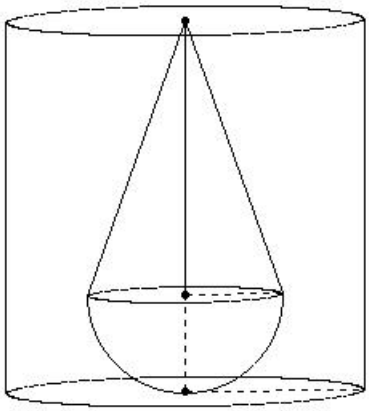
8. A solid consisting of a right circular cone, standing on a hemisphere is placed upright, in a right circular cylinder full of water and touches the bottom. The radius of the cylinder is 11.00 cm and height is 23.00 cm. The radius of the hemisphere is 6.00 cm and the height of the cone is 17.00 cm. Find the volume of water left in the cylinder.



(i) 7412.86 cu.cm (ii) 7652.86 cu.cm (iii) 7502.86 cu.cm

(iv) 7772.86 cu.cm (v) 7782.86 cu.cm

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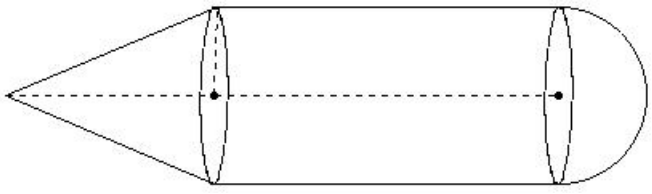
9. A solid consists of a right circular cylinder with a hemisphere on one end and a cone on the other . The radius and height of the cylindrical part are 5.50 cm and 21.50 cm respectively. The radii of the hemispherical and conical parts are the same as that of the cylindrical part. Calculate the volume of the solid, if the height of the conical part is 13.00 cm



(i) 2674.61 cu.cm (ii) 2834.61 cu.cm (iii) 2564.61 cu.cm

(iv) 2924.61 cu.cm (v) 2804.61 cu.cm

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10. 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) $\frac{55294}{120000}$ (ii) $\frac{55298}{120000}$ (iii) $\frac{55296}{120000}$ (iv) $\frac{55296}{119998}$ (v) $\frac{55296}{120002}$

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11. Water in a canal, 11 mt wide and 3 mt deep is flowing with a speed of 20 kmph . How much area will it irrigate in 55 min., if 9 cm of standing water is needed ?

(i) 6882222.22 sq.mts (ii) 6722222.22 sq.mts (iii) 6602222.22 sq.mts

(iv) 6752222.22 sq.mts (v) 6472222.22 sq.mts

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12. A farmer connects a pipe of internal diameter 10 cm from a canal into a cylindrical tank in his field, which is 10 mt in diameter and 1 mt deep. If water flows through the pipe at the rate of 100 kmph , in how much time will the tank be filled ?

(i) 4.00 min. (ii) 6.00 min. (iii) 5.00 min.

(iv) 8.00 min. (v) 7.00 min.

Assignment Key

1) (v)
2) (iv)
3) (i)
4) (iv)
5) (ii)
6) (iv)
7) (i)
8) (ii)
9) (v)
10) (iii)
11) (ii)
12) (ii)