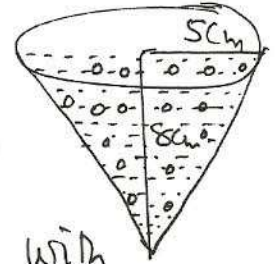


X-Mathematics Assignment No-07-Volumes And Surface Area

Q1. A cylindrical jar of  $r=6\text{cm}$  contains water. Iron spheres, each of radius  $1.5\text{cm}$ , are immersed in the water. How many spheres are necessary to raise the level of the water by  $2\text{cm}$ .

Q2. A vessel is in the form of an inverted cone. Its height is  $8\text{cm}$  and the radius of its top which is open is  $5\text{cm}$ . It is filled with water up to the rim. When lead shots each of which is a sphere of radius  $0.5\text{cm}$ , are dropped into the vessel, one-fourth of the water flows out. Find the number of lead shots dropped in the vessel.

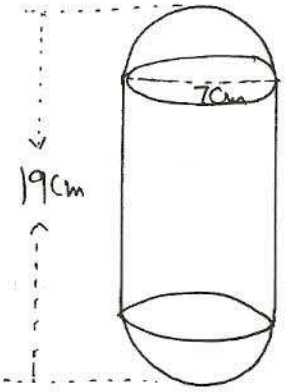


Q3. A hemispherical bowl of internal radius  $15\text{cm}$  contains a liquid. The liquid is to be filled into cylindrical shaped bottles of diameter  $5\text{cm}$  and height  $6\text{cm}$ . How many bottles are necessary to empty the bowl?

Q4. The largest sphere is to be carved out of a right circular cylinder of radius  $7\text{cm}$  and height  $14\text{cm}$ . Find the volume of the sphere.

2

Q5. A solid is in the form of a cylinder with hemispherical ends. The total height of the solid is 19cm and the diameter of the cylinder is 7cm. Find the volume and S.A. of the solid.



Q6. A solid toy is in the form of right circular cylinder with hemispherical shape at one end and a cone at the other end. Their common diameter is 4.2cm and the height of the cylindrical and conical portions are 12cm and 7cm respectively. Find the volume of the solid toy.

Q7. A cylindrical tub of  $r = 5\text{cm}$  and length  $9.8\text{cm}$  is full of water. A solid in the shape of a cone mounted on a hemisphere is immersed into the tub. If the radius of the hemisphere is  $3.5\text{cm}$  and height of the cone outside the hemisphere is  $5\text{cm}$ , find the volume of water left in the tub.

Cont-Pg-3  
→

Q8. The diameters of the internal and external surfaces of a hollow hemispherical shell are 6cm and 10cm respectively. If it is melted and recasted into a solid cylinder of diameter 14cm, find the height of the cylinder.

Q9. A well with diameter 3m is dug 14m deep. Earth taken out of it has been spread evenly all around it in the shape of a circular ring of width 4m to form an embankment. Find the height of the embankment.

Q10. The slant height of the frustum of a cone is 4cm and the perimeters of circular ends are 18cm and 6cm. Find the C.S.A of the frustum.

ANSWERS:-

(Q1) 16	(Q6) $218.06 \text{ cm}^3$
(Q2) 100	(Q7) $616 \text{ cm}^3$
(Q3) 60	(Q8) 1.33cm
(Q4) $1437 \text{ cm}^3$	(Q9) $\frac{9}{8} \text{ cm}$
(Q5) $V = 641.67 \text{ cm}^3$ $S.A = 418 \text{ cm}^2$	(Q10) $48 \text{ cm}^2$