**ASSIGNMENT (2020-21)**

**CLASS - X SUBJECT – MATHEMATICS**

**CH- 13 (SURFACE AREAS AND VOLUME)**

1. A cylinder and a cone are of the same base radius and same height. Find the ratio of the volumes of the cylinder of that of the cone.

   (a) 1 : 3 (b) 1 : 2 (c) 3 : 1 (d) 2 : 1

1. A toy is in the form of a cone mounted on a hemisphere of common base radius 7 cm. The total height of the toy is 31 cm. Find the total surface area of the toy.

          (a) 465 (b) 912 (c) 769 (d) 858

1. What is the area of a semi–circle of radius 5 cm?

          (a) 78.57 cm (b) 71.42 cm (c) 63.18 cm (d) 79.86 cm

1. If a solid, cone of base radius ‘r’ and height ‘h’ is placed over a solid cylinder having same base radius ‘r’ and height – ‘h’ as that of the cone, then the curved surface area of the shape is Is it true?

 (a) No (b) Yes (c) May be (d) Cannot be determined

1. In the figure, the shape of a solid copper piece (made of two pieces) with dimensions as shown. The face ABCDEFA has uniform cross section. Assume that the angles at A, B, C, D, E and F are right angles. Calculate the volume of the piece.



 (a) 840 cm3 (b) 880 cm3  (c) 876 cm3 (d) 890 cm3

1. A 5 m wide cloth is used to make a conical tent of base diameter 14m and height 24m. Find the cost of cloth used at the rate of Rs. 25 per meter.
2. 150 spherical marbles, each of radius 1.4 cm, are dropped in a cylindrical vessel of radius 7 cm containing some water, which are completely immersed in water. Find the rise in the level of water in the vessel.
3. If the radius of the base of a cone is doubled keeping the height same. What is the ratio of the volume of the larger cone to the smaller cone?
4. If the length, breadth and height of a solid cube are in the ratio 4 : 3 : 2 and total surface area is 832 cm2. Find its volume.
5. A hollow cone is cut by a plane parallel to the base and the upper portion is removed. If the curved surface of the remainder is  of the curved surface of the whole cone, find the ratio of the line segments into which the altitude of the cone is divided by the plane.
6. A circus tent is cylindrical to a height of 3 m and conical above it. If its base radius is 52.5 m and slant height of the conical portion is 53 m, find the area of the canvas needed to make the tent.
7. An iron pillar has some part in the form of a right circular cylinder and remaining in the form of a right circular cone. The radius of the base of each of cone and cylinder is 8 cm. The cylindrical part is 240 cm high and the conical part in 36 cm high. Find the weight of the pillar if one cu. cm of iron weighs 7.8 grams.
8. An open container made up of a metal sheet is in the form of a frustum of a cone of height 8 cm with radii of its lower and upper ends as 4 cm and 10 cm respectively. Find the cost of oil which can completely fill the container at the rate of Rs. 50 per litre. Also, find the cost of metal used, if it costs Rs. 5 per 100 cm2.
9. A building is in the form of a cylinder surmounted by a hemispherical dome as shown in the figure. The base diameter of the dome is equal to of the total height of the building. Find the height of the building, if it contains of air.
10. Three cubes of a metal whose edges are in the ratio 3 : 4 : 5 are melted and converted into a single cube whose diagonal is  Find the edges of the three cubes.