ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian minority Institution

Subject: Mathematics   Class: X   Date:30.04.2020

Worksheet-21
Chapter- Real life problems related to solid objects
Topic – Different problems on right circular cone, cylinder, sphere and hemisphere

1. <u>Choose the correct alternative.</u>   **1x15=15**
   a) **The height of a cone is 30 cm. A small cone is cut at the top by a plane parallel to the base. If the volume of the small cone is 1/27 th part of the given cone .At what height the section is made from the top?**
       i)   12 cm   ii) 14 cm   iii)10 cm   iv) none of these
   b) **The radius and height of a right circular cone are in the ratio of 5:12. If its volume is 314 cubic cm.Then slant height is**
       i)   13 cm   ii) 12 cm   iii) 15 cm   iv) none of these
   c)A right circular cylinder having radius 6 cm and height 15 cm is full of icecream. The icecream is to be filled in cones with height 12 cm and radius 3 cm having Hemispherical top. Find the number of such cones.
        i)   15   ii)20   iii)10   iv) none of these
   d)A wire with height 36 m has been made from a solid sphere with 3 cm radius. Then radius of the wire is
         i)   1 mm   ii) 1 cm   iii) 10 mm   iv) none of these
   e)The dimensions of a cuboid are 44 cm, 21 cm and 12 cm.It is melted and a cone with height 24 cm is formed . Radius of the cone is
       i)   20 cm   ii) 21 cm   iii) 12 cm   iv) none of these
   f)The radius of a cone is 7 cm and its height is 9 cm. The volume of this cone is equal to lateral surface area of another cone which has same radius. Find the slant height of the cone.
       i)   21 cm   ii) 22 cm   iii) 24 cm   iv) none of these
   g) A hollow sphere of external and internal diameter 8 cm and 4 cm respectively is melted and made into a right circular cone with base diameter 8 cm. Find the height of the cone.
       i)   16 cm   ii) 20 cm   iii) 14 cm   iv) none of these
   h)A right circular cylinder and cone have equal base and equal heights. If their curved surface areas are in the ratio 8:5 , find the ratio between radius of their bases and heights
        i)   3:4   ii) 2:3   iii) 1:3   iv) none of these
   i)Volume of a solid sphere is 38808 cubic cm. Curved surface area of the sphere is
       i) 4455 sq cm   ii) 5544 sq cm   iii) 5544 cubic cm   iv) none of these
   j)The volume and radius of a right circular cone and a right circular cylinder are

same. Find the ratio of their heights.

    i)   3:1 ii) 1:3   iii) 2:1   iv) none of these

k)Find the ratio of the volumes of aright circular cone , a hemisphere and a right circular cylinder . Their heights and radii are same and radius = height.

i)   3:2 :1 ii) 1:2:3   iii) 2:3:1   iv) none of these

l) If curved surface area and base radius of a hemisphere and a right circular cone are equal then find the ratio of radius and height   of the cone.

i) $\sqrt{3}$: 1   ii)1:$\sqrt{3}$ iii) 1:3   iv) none of these

m) A right circular cone and a hemisphere have equal bases. Find ratio of height and radius given that their volumes are same.

i) 2:1   ii) 1:2   iii) 1:3   iv) none of these

n)Melting a right circular hollow cylinder with external and internal radius 25 cm and 24 cm a solid cylinder is made with same height as the hollow cylinder. Find radius of the solid cylinder.

i) 9 cm   ii) 7 cm   iii) 14 cm   iv) none of these

o)Radius of a right circular cylinder has decreased by 20% and height has increased by 10% ,What is the % of change in curved surface area.

i) 12%   ii) 24%   iii) 10 %   iv) none of these

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