



# ST. LAWRENCE HIGH SCHOOL



## A Jesuit Christian minority Institution

Subject: Mathematics

Class: X

Date:30.04.2020

### Answer key of Worksheet-21

Chapter- Real life problems related to solid objects

Topic - Different problems on right circular cone, cylinder, sphere and hemisphere

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1. Choose the correct alternative.  $1 \times 15 = 15$
- 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  $\frac{1}{27}$  th part of the given cone .At what height the section is made from the top?  
Ans iii)10 cm
- 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  
Ans i)13 cm
- 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.  
Ans iii)10
- d)A wire with height 36 m has been made from a solid sphere with 3 cm radius. Then radius of the wire is  
Ans i)1 mm
- 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  
Ans ii) 21 cm
- 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.  
Ans i)21 cm
- 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.  
Ans iii) 14 cm
- 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  
Ans i)3:4
- i)Volume of a solid sphere is 38808 cubic cm. Curved surface area of the sphere is  
Ans ii) 5544 sq cm
- j)The volume and radius of a right circular cone and a right circular cylinder are

same. Find the ratio of their heights.

Ans i) 3:1

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

Ans ii) 1:2:3

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.

Ans ii)  $1:\sqrt{3}$

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

Ans i) 2:1

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.

Ans ii) 7 cm

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.

Ans i) 12%

Aparajita Mondal