INTERNATIONAL INDIAN SCHOOL BURAIDAH
MATHS-WORK SHEET-2025-26
CLASS X
CH:13-SURFACE AREAS AND VOLUMES

MCQ:

1-A rectangular sheet of paper 40 cm X 22 cm is rolled to form a hollow cylinder of height 40 cm .The radius of the cylinder(in cm) is :

(a) 3.5 cm (b) 2.5 cm (c) 5.3 cm (d) 5 cm

2-The Surface areas of two spheres are in the ratio 16:9 .The ratio of their volumes is:

(a) 64 : 27 (b) 4 : 3 (c) 16 : 9 (d) $16^3 : 9^3$

3-A solid right -circular cone is cut into two two parts at the misiddle of its height by a plane parallel to its base .The ratio of the volume of the smaller cone to the whole cone is :

(a) 1 : 2 (b) 1 : 6 (c) 1 : 4 (d) $1 : 8$

4-If the radius of the base of a right- circular cylinder is halved keeping the height same , then the ratio of the volume of the cylinder thus obtained to the volume of the original cylinder is :

(a) 1 : 2 (b) 2 : 1 (c) 1 : 4 (d) $4 : 1$

5- A solid is hemispherical at the bottom and conical(of same radius) above it.If the surface area of the two are equal then the ratio of the radius and the slant height of the conical part is

(a) 2 : 1 (b) 1 : 4 (c) 1 : 2 (d) $4 : 1$

6-If the volume of a cube is 729 cm^3,what is the length of its diagonal ?

(a) $9\sqrt{2}$ cm (b) 12 cm (c) 11 cm (d) 13 cm

7-The curved surface Area of right circular cone of radius 14 cm is 440 sq cm .what is the slant height of the cone?

(a) 10 cm (b) 12 cm (c) 11 cm (d) 13 cm

8- A right triangle with sides 3 cm ,4 cm and 5 cm is rotated about the side of 3 cm to form a cone . The volume of the cone so formed is:

(a) $12\pi\ cm^3$ (b) $16\pi\ cm^3$ (c) $15\pi\ cm^3$ (d) $20\pi\ cm^3$

9- The radius of the largest circular cone that can be cut out from a cube of edge 4.2 cm is:

(a) 4.2 cm (b) 8.4 cm (c) 2.1 cm (d) 1.05 cm

10-If the surface area of a sphere is 616 cm^2, then the radius of the sphere is:

(a) 14 cm (b) 3.5 cm (c) 7 cm (d) None of these

Assertion -Reason Questions

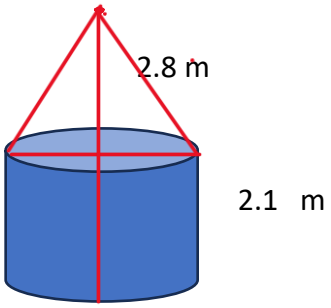
The following questions consist of two statements -Assertion (A) and Reason(R) .Answer these questions selecting the appropriate option given below :

(a) Both A and R true and R is the correct explanation for A.
(b) Both A and R are true but R is not the correct explanation for A
(c) A is true but R is false.
(d) A is false but R is true .

1-**Assertion :** A hemisphere of radius 7 cm is to be painted outside on the surface .The total cost of painting at Rs 5 per cm^2 is Rs 2300.
Reason: The total surface Area of Hemisphere is $3\pi\ cm^2$
2-**Assertion** : Total surface area of TOP is the sum of the curved surface area of the hemisphere and curved surface area of the cone .
Reason: TOP is obtained by fixing the plane surfaces of the hemisphere and cone together.

Subjective Type Question :

1-Volume and total surface area of a solid hemisphere are numerically equal .What is the diameter of hemisphere ?
2-If the total surface area of a solid hemisphere is 462 cm^2 , finds it volume .
3-The volume of a hemisphere is 2425.5 cm^3 .Find its curved surface area .
4-Two cubes ,each of volume 27 cm^3 are joined end to end to form a solid .Find the surface area of resulting cuboid.
5-The largest possible sphere is carved out of a solid wooden cube of side 7 cm .Find the volume Of wood left.
6-In the given figure a tent is in the shape of cylinder surmounted by a conical top of same diameter.If the height and diameter of cylinder part are 2.1 m and 3m ,respectivelyand the slant height of conical part is 2.8 m ,find the cost of canvas needed to make the tent if the canvas is available at the rate of Rs 500 per sq. m (use $\pi = \frac{22}{7}$)



7-A cubical block of side 10 cm is surmounted by a hemisphere .What is the largest diameter that the hemisphere can have ? Find the cost of painting the total surface area of the solid so formed ,at the rate of Rs 5 per 100 sq cm .

8-A-juice -seller serves his customers using a glass whose inner diameter is 5 cm but the bottom of the glass has raised hemispherical portion that reduces its capacity .If the height of the glass is 10 cm ,find the apparent and actual capacities of the glass. (use $\pi = \frac{22}{7}$)

9-Water in a canal , 5.4 wide and 1.8 m deep, in flowing with a speed of 25 km/hour .How much area can it irrigate in 40 minutes , if 10 cm of standing water is required for irrigation.

10-Sushant has a vessel in the shape of inverted cone that is open at the top .Its height is 11 cm and the radius of top is 2.5 cm .It is full of water and metallic spherical balls of diameter 0.5 cm are put in the vessel such that $\frac{2}{5}$ th of the water flows out.Find the number of balls that were put in the vessel .

11- A well of diameter 4 m is dug 14 m deep.The earth taken out is spread evenly all around the well to form a 40 cm high embankment .Find the width of embankment.

12-A solid is in a shape of right -circular cone surmounted on a hemisphere ,the radius of each of them being 7 cm and the height of the cone is equal to its diameter .find the volume of the solid.

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