

Assignment Question

SURFACE AREAS AND VOLUMES

MCQ

1. A Surahi is the combination of
 - (a) a sphere and a hemisphere
 - (b) a sphere and a cylinder
 - (c) two hemisphere
 - (d) a hemisphere and cylinder

2. A shuttle cock used for playing badminton has the shape of the combination of
 - (a) a cylinder and a sphere
 - (b) a sphere and a cone
 - (c) a cylinder and a hemisphere
 - (d) frustum of cone and hemisphere

3. A solid piece of iron in the form of a cuboid of dimensions 49 cm x 33 cm x 24 cm is melted to form a solid sphere. The radius of the sphere is
 - (a) 21 cm
 - (b) 23 cm
 - (c) 25 cm
 - (d) 19 cm

4. If two solid hemisphere of same base radius r are joined together along their bases, then surface area of this new solid is
 - (a) $4\pi r^2$
 - (b) $6\pi r^2$
 - (c) $3\pi r^2$
 - (d) $8\pi r^2$

5. Twelve solid spheres of the same size are made by melting a solid metallic cylinder of base diameter 2 cm and height 16 cm. The diameter of each sphere is
 - (a) 4 cm
 - (b) 3 cm
 - (c) 2 cm
 - (d) 6 cm

6. A hollow cube of internal edge 22 cm is filled with spherical marbles of diameter 0.5 cm and it is assumed that space of the cube remains unfilled. Then the no. of marbles that the cube can accommodate is 81
 - (a) 142296
 - (b) 142396
 - (c) 142496
 - (d) 142596

7. A mason constructs a wall dimensions 270 cm x 300 cm x 350 cm with the bricks each of size 22.5 cm x 11.25 cm x 8.75 cm and it is assumed that space is covered by the mortar. Then the number of bricks used to construct the wall is 81
 - (a) 11100
 - (b) 11200
 - (c) 11000
 - (d) 11300

8. The radii of the top and bottom of a bucket of slant height 45 cm and 28 cm and 7cm respectively, the curved surface area of the bucket is
 - (a) 4950 cm^2
 - (b) 4951 cm^2
 - (c) 4952 cm^2
 - (d) 4953 cm^2

9. Volumes of two sphere are in the ratio 64 : 27. The ratio of their surface areas is
- (a) 3 : 4 (b) 4 : 3 (c) 9 : 16 (d) 16 : 9
10. A right circular cylinder of radius r cm and the height h cm ($h > 2r$) just enclose a sphere of diameter
- (a) r cm (b) $2r$ cm (c) h cm (d) $2h$ cm
11. A medicine capsule is in the shape of a cylinder of diameter 0.5 cm with two hemisphere stack to each of its ends. The length of entire capsule is 2 cm. The capacity of the capsule is
- (a) 0.36 cm^3 (b) 0.35 cm^3 (c) 0.34 cm^3 (d) 0.33 cm^3
12. The radii of the ends of a frustum of a cone 40 cm high are 20 cm and 11 cm. Its slant height is
- (a) 41 cm (b) $20\sqrt{5}$ cm (c) 49 cm (d) $\sqrt{521}$
13. A sphere of radius 6 cm is dropped into a cylindrical vessel partly filled with water the radius of the vessel is 8 cm. If the sphere is submerged completely, then the surface of the water rises by
- (a) 4.5 cm (b) 4 cm (c) 3 cm (d) 2 cm
14. A solid consists of a circular cylinder with an exact fitting right circular cone placed at the top. If the height of the cone is h and the total volume of the solid is 3 times the volume of the cone, then the height of the circular cylinder is
- (a) $2h$ (b) $2h/3$ (c) $3h/2$ (d) $4h$

SHORT TYPE QUESTIONS (2 marks each)

1. A cone of height 24 cm and radius of base 6 cm is made up of modelling clay, find the volume of cone.
2. The cylindrical cans have equal base areas. If one of the can is 15 cm high & other is 20 cm high, find the ratio of their volumes.
3. In a box whose dimensions are 12 cm x 4 cm x 3 cm, what is the length of the longest stick that can be placed ?
4. Find the volume of a cylinder whose height is 12 cm & radius is 5 cm.
5. It costs Rs.2200 to paint the inner curved surface of a cylindrical vessel 10 m deep. If the cost of painting is at the rate of Rs.20 per m^2 , find inner curved surface area of the vessel.
6. The height of a right circular cone is 12 cm & the radius of its base is 4.5 cm. Find the slant height.
7. A conical military tent having the diameter of the base is 24 m and slant height of the tent is 13 m, find the curved surface area of the cone.
8. A jokers cap is in the form of a right circular cone of base radius 7 cm & the slant height is 25 cm. Find the area of the cap.
9. The radius of the sphere is 6 cm. Find the volume of sphere.
10. Find the radius of the sphere whose surface area is 154 cm^2 .

11. Two cubes have their volume in the ratio 1 : 64. What is the ratio of their surface areas ?
12. A sphere of maximum volume is cut out from a solid hemisphere of radius 7 cm. What is the ratio of the volume of the hemisphere to that of the cut out sphere.
13. If the areas of circular bases of a frustum of a cone are 4 cm^2 & 9 cm^2 respectively & the height of the frustum is 12 cm, then find the volume of the frustum (take $\pi = 722$)
14. The radii of the bases of a cylinder and a cone are in the ratio 3 : 5 & their heights are in the ratio 3 : 4. What is the ratio of their volumes ?
15. A cone & a sphere have equal radii and equal volume. What is the ratio of the diameter of the sphere to the height of the cone ?
16. Determine the ratio of the volume of a cube to that of a sphere which will exactly fit inside cube.
17. One iron solid is a cuboid of dimensions 30 cm x 30 cm x 42 cm. If it is melted & cubes each of side 3 cm & moulded from it. Find the number of cubes formed.
18. A granary is in the shape of a cuboid of size 8 m x 6 m x 3 m. If a bag of grain occupies a space of 0.65 m^3 . How many bags can be stored in the granary ?
19. 2 cubes each of volume 64 cm^3 are joined end to end. Find the surface area of the resulting cuboid.
20. A vessel is in the form of a hollow hemisphere mounted by a hollow cylinder. The diameter of the hemisphere is 14 cm & the total height of the vessel is 13 cm. Find the inner surface area of the vessel.

