1. If the radii of the circular ends of a conical bucket of height 45cm, are 28 cm and 7 cm, then the capacity of the bucket is :

(A) 48605 cm3.

(B) 48510 cm3.

(C) 48150 cm3.

(D) 4715 cm3.

2. A cuboidal metal of dimensions 44 cm × 30 cm × 15 cm was melted and cast into a cylinder of height 28 cm. Its radius is :

(A) 10 cm.

(B) 12 cm.

(C) 15 cm.

(D) 20 cm.

3. The surface areas of a sphere and a cube are equal and if their volumes are V_1 and V_2 respectively, then V_1/V_2 :

(A) $3:\sqrt{2}$

(B) $\sqrt{6} : \sqrt{\pi}$

(C) $3 : 2\pi$

(D) None

4. A solid consists of a circular cylinder with an exact fitting right circular cone placed at the top. The height of the cone is h. If the total volume of the solid is 3 times the volume of the cone, the height of the circular cylinder is :

(A) 1/2 h.

(B) 1/3 h.

(C) 2/3 h.

(D) 3/2 h.

5. If a hemispherical depression is cutout from one face of a cubical wooden block, such that, the diameter 'd' of the hemisphere is equal to the edge of the cube, the surface area of the remaining solid is

(A) $d^2/2$ $(10 + \pi)$.

(B) $d^2/4$ $(12 + \pi)$.

(C) $d^2/2$ $(24 + \pi)$.

(D) None of these

6. A metal cube of an edge 12cm, is melted and recasted into three small cubes. If the edges of two small cubes is 6cm and 8cm respectively, then the edge of the third small cube is :

(A) 9 cm.

(B) 10 cm.

(C) 20 cm.

(D) 25 cm.

7. A piece of metal pipe is 66 cm long with inside diameter of the cross section is 4 cm. If the outer diameter is 5.5 cm and the metal weighs 7 gm/cu cm, the weight of pipe is :

(A) 5.754 kg.

(B) 5.187 kg.

(C) 5.172 kg.

(D) 4.154 kg.

8. A cylinder has been cut out from a cube as shown below. The volume of the remaining figure is :

(A) 255 cm3.

(B) 145 cm3.

(C) 135 cm3.

(D) 125 cm3.

9. A conical flask has base of radius 'a' cm and height of 'h' cm. It is completely filled with milk. The milk is poured into a cylindrical thermos flask, whose base is of radius p cm. The height of the solution level in the flask is :

(A) $h/3p^2$

(B) $ha^2/3p^2$

(C) $ha^2/3p$

(D) $ha/3p^2$

10. A conical cavity is drilled in a circular cylinder of height 15 cm and base of radius 8 cm. The height and the base radius of the cone are also the same. Then, the whole surface of the remaining solid (in cm^3) is :

(A) 240π.

(B) 440π.

(C) 640π.

(D) 960π.

1. The surface area of a cuboid is

(a) $2(lb + bh + lh)$ (b) $3(lb + bh + lh)$ (c) $2(lb - bh - lh)$ (d) $3(lb - bh - lh)$

2. The surface area of a cube if edge 'a' is

(a) $7a^2$ (b) $6a^2$ (c) $5a^3$ (d) $5a^2$

3. The length, breadth and height of a room is 5m, 4m and 3m. The cost of white washing its four walls at the rate of Rs. 7.50 per m^2 is

(a) Rs. 110 (b) Rs. 109 (c) Rs. 220 (d) Rs. 105

4. The perimeter of floor of rectangular hall is 250m. The cost of the white washing its four walls is Rs. 15000. The height of the room is

(a) 5m (b) 4m (c) 6m (d) 8m

5. The breadth of a room is twice its height and is half of its length. The volume of room is 512dm3.Its dimensions are

(a) 16 dm, 8 dm, 4 dm (b) 12 dm, 8 dm, 2 dm

(c) 8 dm, 4 dm, 2 dm (d) 10 dm, 15 dm, 20 dm

6. The area of three adjacent faces of a cube is x, y and z. Its volume V is

(a) $V = xyz$ (b) $V^3 = xyz$ (c) $V^2 = xyz$ (d) none of these

7. Two cubes each of edge 12 cm are joined. The surface area of new cuboid is

(a) 140 cm2 (b) 1440 cm2 (c) 144 cm2 (d) 72 cm2

8. The curved surface area of cylinder of height 'h' and base radius 'r' is

(a) 2∏rh (b) ∏rh (c) 12∏rh (d) none of these

9. The total surface area of cylinder of base radius 'r' and height 'h' is

(a) $2\pi(r + h)$ (b) $2\pi r(r + h)$ (c) $3\pi r(r + h)$ (d) $4\pi r(r + h)$

10. The curved surface area of a cylinder of height 14 cm is 88 cm2. The diameter of its circular base is

(a) 5cm (b) 4cm (c) 3cm (d) 2cm

11. It is required to make a closed cylindrical tank of height 1 m and base diameter 140cm from ametal sheet. How many square meters a sheet are required for the same?

(a) 6.45m2 (b) 6.48m2 (c) 7.48m2 (d) 5.48m2.

12. A metal pipe is 77 cm long. Inner diameter of cross section is 4 cm and outer diameter is 4.4 cm. Its inner curved surface area is:

(a) 864 cm2 (b) 968 cm2 (c) 768 cm2 (d) none of these

1. A shuttlecock 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 a cone and a hemisphere

Answer: (d) frustum of a cone and a hemisphere

2. The cost of painting a cubical box of side 3m at the rate of Rs.2 per sq.m is

(a) Rs.108

(b) Rs.120

(c) Rs.125

(d) Rs.112

Answer: (a) Rs.108

3. The volume of the cuboid whose length, breadth and height is 12cm, 8cm and 6cm is

(a) 568 cu.cm

(b) 576 cu.cm

(c) 576 sq.cm

(d) 570 cu.cm

Answer: (b) 576 cu.cm

4. The base area of the cylinder is 80 sq.cm. If its height is 5cm, then its volume is

(a) 200 cu.cm

(b) 80 cu.cm

(c) 100 cu.cm

(d) 400 cu.cm

Answer: (d) 400 cu.cm

5. The total surface area of a hemispherical solid having radius 7 cm is

(a) 462 cm2

(b) 294 cm2

(c) 588 cm2

(d) 154 cm2

Answer: (a) 462 cm2

6. A piece of paper is in the shape of a semi¬circular region of radius 10 cm. It is rolled to form a right circular cone. The slant height is
(a) 5 cm
(b) 10 cm
(c) 15 cm

(d) 20 cm

Answer: (b) 10 cm

7. A right circular cylinder of radius r cm and height h cm (h > 2r) just encloses a sphere of diameter

(a) r cm

(b) 2r cm

(c) h cm

(d) 2h cm

Answer: (b) 2r cm

8. The curved surface area of glass having radii 3 cm and 4 cm respectively and slant height 10 cm is

(a) 55 cm2

(b) 110 cm2

(c) 220 cm2

(d) 440 cm2

Answer: (c) 220 cm2

9. A surahi is the combination of:
(a) a sphere and a cylinder
(b) a hemisphere and a cylinder
(c) two hemispheres
(d) a cylinder and a cone
Answer: (a) a sphere and a cylinder

10. If the radius and height of a cylinder are in the ratio 5 : 7 and its volume is 550 cm3, then its radius is equal to (Take $\pi = 22/7$)

(a) 5 cm

(b) 7 cm

(c) 6 cm

(d) 10 cm

Answer: (a) 5 cm

11. If the curved surface area of a solid right circular cylinder of height h and radius r is one-third of its total surface area, then

(a) h = 1/3 r

(b) h = 1/2 r

(c) h = r

(d) h = 2r

Answer: (b) h = 1/2 r

12. If two solid hemispheres of same base radius are joined together along their bases, then curved surface area of this new solid is

(a) 3πr2

(b) 4πr2

(c) 5πr2

(d) 6πr2

Answer: (b) 4πr2

13. The radius (in cm) of the largest right circular cone that can be cut out from a cube of edge 4.2 cm is:
(a) 4.2
(b) 2.1
(c) 8.1
(d) 1.05
Answer: (b) 2.1

14. A mason constructs a wall of 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 1/8 space is covered by the mortar.

Then the number of bricks used to construct the wall is

(a) 11100 cm

(b) 11200 cm

(c) 11000 cm

(d) 11300 cm

Answer: (b) 11200 cm

15. A conical tent with base-radius 7 m and height 24 m is made from 5 m wide canvas. The length of the canvas used is (Take π = 22/7)

(a) 100 m

(b) 105 m

(c) 110 m

(d) 115 m

Answer: (c) 110 m

16. A container (open at the top) made up of metal sheet is in the form of a frustum of a cone of height 16 cm with radii of its lower and upper ends 8cm and 20 cm respectively. The amount of liquid the container can hold is (Take π = 3.14)

(a) 104.49 l

(b) 10.95 l

(c) 12 l

(d) 10.45 l

Answer: (d) 10.45 l

17. A solid piece of iron in the form of a cuboid of dimensions 49 cm x 33 cm x 24 cm, is moulded to form a solid sphere. The radius of the sphere is

(a) 21 cm

(b) 23 cm

(c) 25 cm

(d) 19 cm

Answer: (a) 21 cm

18. The volumes of two spheres are in the ratio 125 : 64. The ratio of their surface areas is

(a) 9 : 16

(b) 16 : 9

(c) 25 : 16

(d) 16 : 25

Answer: (c) 25 : 16

19. If the volume of a cube is 343 cm , then its edge is

(a) 9cm

(b) 8cm

(c) 49cm

(d) 7cm

Answer: (d) 7cm

20. A cube whose edge is 20 cm long, has circles on each of its faces painted black. What is the total area of the unpainted surface of the cube if the circles are of the largest possible areas?

(a) 90.72 cm2

(b) 256.72 cm2

(c) 330.3 cm2

(d) 514.28 cm2

Answer: (d) 514.28 cm2

21. The radii of the top and bottom of a bucket of slant height 13 cm are 9 cm and 4 cm respectively. The height of the bucket is
(a) 10 cm
(b) 12 cm
(c) 15 cm
(d) 16 cm
Answer: (b) 12 cm

22. The radius and height of a right circular cone and that of a right circular cylinder are respectively equal. If the volume of the cylinder is 300 cu.cm, then the volume of the cone is

(a) 300 cu.cm

(b) 100 cu.cm

(c) 600 cu.cm

(d) 900 cu.cm

Answer: (b) 100 cu.cm

23. If a solid metallic sphere of radius 8 cm is melted and recasted into n spherical solid balls of radius 1 cm, then n =

(a) 500

(b) 510

(c) 512

(d) 516

Answer: (c) 512

24.If the diameter of a metallic sphere is 6 cm, it is melted and a wire of diameter 0·2 cm is drawn, then the length of the wire made shall be

(a) 24 m

(b) 28 m

(c) 32 m

(d) 36 m

Answer: (d) 36 m