

**KINETICS**

We Nurture The Future

IIT-JEE | Medical | Foundations

Surface Areas and Volumes

Question 1.

If a spherical balloon grows to twice its radius when inflated, then the ratio of the volume of the inflated balloon to the original balloon is

- (a) it is 8 : 1
- (b) it is 4 : 1
- (c) it is 5 : 1
- (d) it is 6 : 1

Answer: (a) it is 8 : 1

Question 2.

The length of the longest rod that can fit in a cubical vessel of side 10 cm, is

- (a) 10 cm
- (b) $10\sqrt{2}$ cm
- (c) $10\sqrt{3}$ cm
- (d) 20 cm

Answer: (c) $10\sqrt{3}$ cm

Question 3.

A right circular cone has an altitude of 40 cm and a diameter of 60 cm. The slant height of the cone is

- (a) 25 cm
- (b) 100 cm
- (c) 75 cm
- (d) 50 cm

Answer: (d) 50 cm

Question 4.

If the diameter of the base of a cylindrical pillar is 4 m and its height is 21 m, then the cost of

construction of the pillar at Rs. 1.50 per cubic metre is:

- (a) Rs. 396
- (b) Rs. 400
- (c) Rs. 410
- (d) Rs. 420

Answer: (a) Rs. 396

Question 5.

The height of a right circular cone of radius 5 cm and slant height 13 cm is

- (a) 8 cm
- (b) 14 cm
- (c) 6 cm
- (d) 12 cm

Answer: (d) 12 cm

Question 6.

The curved surface area of a right circular cone whose slant height is 14 cm and base radius is 21 cm is

- (a) 308 cm^2
- (b) 924 cm^2
- (c) 232 cm^2
- (d) 446 cm^2

Answer: (b) 924 cm^2

Question 7.

The perimeter of one face of a cube is 40 cm. The volume of the cube (in cm^3) is :

- (a) 1600
- (b) 1000
- (c) 800
- (d) 160

Answer: (b) 1000

Question 8.

The volume of the cylinder whose height is 14 cm and diameter of base 4 cm is:

- (a) 176 cm^3
- (b) 196 cm^3
- (c) 276 cm^3
- (d) 352 cm^3

Answer: (a) 176 cm^3

Question 9.

A beam 9 m long, 40 cm wide and 20 cm deep is made up of iron which weighs 50 kg per cubic metre. The weight of the beam is :

- (a) 27 kg
- (b) 36 kg
- (c) 48 kg
- (d) 56 kg

Answer: (b) 36 kg

Question 10.

The area surrounded by a conical tent is 4526 m^2 . If the cost of canvas is Rs. 17 per square meter, then find the total cost of canvas.

- (a) ₹52100
- (b) ₹76942
- (c) ₹65000
- (d) ₹85246

Answer: (b) ₹76942

Question 11.

The surface area of cuboid-shaped box having length=80 cm, breadth=40cm and height=20cm is:

- (a) 11200 sq.cm
- (b) 13000 sq.cm
- (c) 13400 sq.cm
- (d) 12000 sq.cm

Answer: (a) 11200 sq.cm

Question 12.

The volume of a sphere is 38808 cu.cm. The curved surface area of the sphere (in cm^2) is :

- (a) 5544
- (b) 1386
- (c) 8316
- (d) 4158

Answer: (a) 5544

Question 13.

The height of a right circular cone of radius 3.5 cm and volume 77 cm^3 is

- (a) 9 cm
- (b) 11 cm
- (c) 4 cm
- (d) 6 cm

Answer: (d) 6 cm

Question 14.

The ratio of the radii of two spheres whose volumes are in the ratio 64 : 27 is

- (a) it is 8 : 3.
- (b) it is 16 : 9.
- (c) it is 10 : 7.
- (d) it is 4 : 3.

Answer: (d) it is 4 : 3.

Question 15.

If the diameter of a cylinder is 28 cm and its height is 20 cm, then total surface area (in cm^2) is :

- (a) 2993
- (b) 2992
- (c) 2292
- (d) 2229

Answer: (b) 2992

Question 16.

The radius of two similar right circular cones are 2 cm and 6 cm. The ratio of their volumes is

- (a) 1 : 3
- (b) 1 : 9
- (c) 9 : 1
- (d) 1 : 27

Answer: (d) 1 : 27

Question 17.

A rectangular sand box is 5 m wide and 2 m long. How many cubic metres of sand are needed to fill the box upto a depth of 10 cm ?

- (a) 1
- (b) 10
- (c) 100
- (d) 1000

Answer: (a) 1

Question 18.

The cost of cementing the inner curved surface of a 14 m deep well of radius 2 m at the rate of ₹2 per m^2 is

- (a) ₹352.
- (b) ₹176.
- (c) ₹56.
- (d) ₹112.

Answer: (a) ₹352.

Question 19.

The slant height of a cone with radius 15 cm and height 20 cm is

- (a) 21 cm
- (b) 20 cm
- (c) 25 cm
- (d) 15 cm

Answer: (c) 25 cm

Question 20.

A hemispherical bowl is made of steel 0.25 cm thick. If the inner radius of the bowl is 3.25 cm, then the outer curved surface area of the bowl is

- (a) 154 cm^2 .
- (b) 77 cm^2 .
- (c) 115.5 cm^2 .
- (d) 38.5 cm^2 .

Answer: (b) 77 cm^2 .

Question 21.

A conical tent is 15 m high and the radius of its base is 20 m. The cost of the canvas required to make the tent at the rate of ₹7 per m^2 is

- (a) ₹10000
- (b) ₹12000
- (c) ₹11000
- (d) ₹9000

Answer: (c) ₹11000

Question 22.

The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2 . The diameter of the base is:

- (a) 2 cm
- (b) 3 cm
- (c) 4 cm
- (d) 6 cm

Answer: (a) 2 cm
