

APTITUDE QUIZ

Volume and Surface Area Questions and Answers

Q.1 A copper wire having 0.20 cm as the radius of its circular section is one-meter long. It is melted and spherical balls of radius 0.20 cm are made. The number of balls that can be made is.....

- (A) 300
- (B) 375
- (C) 275
- (D) 350

Q.2 The altitude of a circular cylinder is increased six times and the base area is decreased to one-ninth of its value. The factor by which the lateral surface of the cylinder increases is....

- (A) $\frac{1}{2}$ m
- (B) $\frac{2}{3}$ m
- (C) $\frac{3}{2}$ m
- (D) 2 m

Q.3 A circular pipe is to be so designed that water flowing through it at a velocity of 4 meters per minutes is collected at its open end of 11 cubic meters per minute. What should be the inner radius of the pipe?

- (A) $\frac{1}{2}$ m

(B) $\frac{1}{\sqrt{2}}$ m

(C) $\sqrt{2}$ m

(D) 2 m

Q.4 The radii of the bases of a cylinder and a cone are in the ratio 3: 4. If height of the cylinder and cone are in the ratio 2: 3, then their volumes are in the ratio....

(A) 9: 8

(B) 8: 9

(C) 3: 4

(D) 4: 3

Q.5 If three solid gold spherical beads of radii 3 cm, 4 cm, and 5 cm respectively are melted into one spherical bead, then its radius in cm is.....

(A) 5

(B) 4

(C) 7

(D) 6

Q.6 If the lateral surface of a cylinder is developed in a square whose diagonal is $\sqrt{2}$ cm long, then the volume of the cylinder in cubic centimeters is.....

(A) $\frac{1}{4} \pi$

(B) 2π

(C) $3\pi/4$

(D) 2π

Q.7 If the diameter of the base circle of a cone is equal to 54 cm and the generator is 13 cm, then the area of the axial section will be.

- (A) 240 cm^2
- (B) 120 cm^2
- (C) 60 cm^2
- (D) 32.5 cm^2

Q.8 A plane is drawn parallel to the base of a right circular cone dividing the altitude in the ratio of 2: 1 to chop off the conical part. The chopped off conical part is taller than the remaining portion. The ratio of the volumes of the chopped off part and the remaining part is....

- (A) 1: 26
- (B) 2: 25
- (C) 4: 23
- (D) 8: 19

Q.9 If area of the diagonal section of a cube is equal to $4\sqrt{2} \text{ cm}^2$, then edge of the cube is....

- (A) 4 cm
- (B) 3 cm
- (C) $2\sqrt{2} \text{ cm}$
- (D) 2 cm

Q.10 If length, breadth and height of a rectangular solid are 10 cm, 5 cm, and 2 cm respectively, then its whole surface area in sq. cms. is....

- (A) 7
- (B) 70
- (C) 160
- (D) 280

Q.11 A gold bar in the shape of a rectangular solid, 36 cm long, 9 cm broad and 6 cm high, is to be melted and cast into two different cubes, the volume the bigger being eight times that of the smaller. The surface is of the smaller cube, in cm^2 is....

- (A) 36
- (B) 216
- (C) 72
- (D) 144

Q.12 If base diameter and the height of a right circular cone are each increased by 100%, then the volume of the will increase by....

- (A) 100%
- (B) 200%
- (C) 400%
- (D) 700%

Q.13 If a solid metal cylinder of radius 4 cm and height 10 cm, is melted to make solid balls of radius 1 mm, then number of such balls produced (in lakhs) will be.

- (A) 0.8 lakh
- (B) 1.0 lakh

(C) 1.2 lakh

(D) 1.4 lakh

Q.14 If a rectangular paper of length 30 cm and width 12 cm is rolled to form a cylinder with height equal to width of the paper, then its base radius will be...

(A) $18/\pi$

(B) $15/\pi$ cm

(C) $15/2 \pi$ cm

(D) $9/2 \pi$ cm

Q.15 If diameter of the base of right circular cylinder is r and its height is equal to radius of base, then its volume is....

(A) $1/8 \pi r^2$

(B) πr^3

(C) $2\pi r^3$

(D) $4\pi r^3$

Q.16 If numerical value of the curved surface area of a right circular cylinder is equal to numerical value of its volume, then numerical value of the radius of the base of the cylinder is....

(A) 4

(B) 3

(C) 2

(D) 1

Q.17 If edges of a cuboid are 3 cm, 4 cm and 12 cm, then length of its diagonal will be.

- (A) 5 cm
- (B) 19 cm
- (C) 12 cm
- (D) 13 cm

Q.18 The area of a rhombus with side 50 dm and one of the diagonals 80 dm, is...

- (A) 1600 dm²
- (B) 500 dm²
- (C) 1200 dm²
- (D) 2500 dm²

Q.19 If side of a square is 4 m, then area of the square in m² drawn on its diagonal is....

- (A) 16
- (B) 32
- (C) $16\sqrt{2}$
- (D) $32\sqrt{2}$

Q.20 Volume of a right circular cylinder and the volume of a sphere (whose radius is same as that of cylinder) are equal. If the height of the cylinder is....

- (A) $\frac{4}{5}$ times of its radius
- (B) $\frac{4}{3}$ times if its radius

(C) equal to its radius

(D) equal to its diameter

Q.21 If a spherical lead of radius 20 cm is melted and small lead balls of radius 2 cm are made, then the total number of possible small lead balls is....

(A) 8000

(B) 800

(C) 80

(D) 100

Q.22 The number of rounds that a wheel of diameter 7 m will make in going 4.4 km is....

(A) 1000

(B) 800

(C) 2000

(D) 100

Q.23 A plot of land is the shape of a right angled isosceles triangle.

Length of the hypotenuse side is $50\sqrt{2}$ and cost of the fencing is Rs. 3 per meter. The cost of fencing the plot will be.

(A) Rs. 381

(B) Rs. 341

(C) Rs. 391

(D) Rs. 371

Q.24 A 10 m wide lawn is cultivated all along the outside of a rectangular plot measuring 100 m x 50 m. The total area of the lawn is....

- (A) 750 m²
- (B) 5000 m²
- (C) 2800 m²
- (D) 2400 m²

Q.25 A circle and square have same area. Therefore, ratio of the side of the square and radius of the circle is....

- (A) $\pi: 1$
- (B) $1: \pi$
- (C) $1: \pi$
- (D) $\pi: 1$

Q.26 A metal sheet 27 cm long, 8 cm broad and 1 cm thick is melted into a cube. The difference between the surface areas of the two solids will be...

- (A) 386 cm²
- (B) 286 cm²
- (C) 276 cm²
- (D) 376 cm²

Q.27 If a right cylinder and a right circular cone have the same radius and same volume, then ratio of height of the cylinder to that of the cone is....

- (A) 3: 2

(B) 2: 3

(C) 3: 1

(D) 1: 3

Q.28 A reservoir is in the shape of a frustum of a right circular cone. It is 8 cm across at the top and 4 cm across at the bottom. It is 6 cm deep. Its capacity is.

(A) 176 m³

(B) 186 m³

(C) 88 m³

(D) 93 m³

Q.29 The dimensions of the floor of a rectangular hall are 60 m x 50 m. The floor of this hall is to be tiled fully with 20 cm x 10 cm rectangular tiles without breaking them to smaller size. The number of tiles required is...

(A) 100000

(B) 160000

(C) 150000

(D) 50000

Q.30 Length of the longest rod that can be placed in a room 30 m long, 25 m broad and 18 m high is....

(A) 30 m

(B) 15 Ö2

(C) 60 m

(D) 30 Ö2 m

ANSWERS

1. B
2. D
3. A
4. A
5. D
6. A
7. C
8. D
9. D
10. C
11. B
12. D
13. C
14. B
15. A
16. D

17. D

18. C

19. B

20. B

21. D

22. D

23. B

24. D

25. A

26. B

27. D

28. A

29. C

30. D