Area & Volume Sums

1. How many cubes of 3cm edge can be cut out of a cube of 18cm edge?

a. 36 b. 216 c. 218 d. 432

Answer: b

2. Find the volume of a sphere of radius 10.5cm

a. 1386 cm^3 b. 4851 cm^3 c. 3651 cm^3 d. 2456 cm^3

Answer: b

3. The metallic sphere of radius 12cm is melted into three smaller spheres. If the radii of two smaller spheres are 6cm and 8cm, the radius of the third sphere is

a. 14 cm b. 16 cm c. 10 cm d. 12 cm

Answer: c

4. For what value of radius of a sphere, the volume of the sphere is numerically equal to the surface area of the sphere

a. 1 b. 2 c. 3 d. 4

Answer: c

5. What is the least number of square marbles required for a terrace of 15.17 m long and 9.02m breadth?

a. 1242 b. 407 c. 814 d. 1000

Answer: c

6. The capacity of a cylindrical tank is 246.4 liters. If the height is 4 meters, what is the diameter of the base?

a. 1.4m b. 2.8m c. 0.14m d. 0.28m

Answer: d

7. If the side of an equilateral triangle is decreased by 20% its area is decreased by a. 42% b. 36% c. 34% d. 20%

Answer: b

8. The area of a circle is 220cm^2 , then the area of the square inscribed in the circle is a. 120 cm^2 b. 140 cm^2 c. 135 cm62 d. 250 cm^2

Answer: b

9. If the radius of a circle is doubled, area is multiplied by

a. 3 b. 2 c. 4 d. 8

Answer: c

10. A square is inscribed in a circle whose radius is 4cm. The area of the portion between the circle and the square is

a. $16\pi - 32cm$^2   b. $32\pi - 27cm$^2   c. $20\pi + 11cm$^2   d. $12\pi - 4cm$^2

Answer: a

11. If length and breadth of a rectangle became half and double respectively, then what will be the % increase in resultant area?

a. 0% b. 55% c. 75% d. 80% Answer: a

12. One side of a rectangular field is 15m and one of its diagonals is 17m, then the area of its field is

a. 32 m^2 b. 120 m^2 c. 2 m^2 d. 60 m^2

Answer: b

13. The perimeter of one face of a cube is 20cm. Its volume must be

a. 215 cm^3 b. 200 cm^3 c. 125 cm^3 d. 8000 cm^3

Answer: c

14. What is the volume of a cube whose diagonal measure is 4√3 cm

a. 30 cm^3 b. 46 cm^3 c. 60 cm^3 d. 64 cm^3

Answer: d

15. How many cubes of 10cm edge can be put in a cubical box of 1m edge?

a. 200 b. 1000 c. 10 d. 100

Answer: b

16. How many cubes of 3cm edge can be cut out of a cuboid of 3cm × 18cm × 108cm?

a. 216 b. 326 c. 36 d. 45

Answer: a

17. The capacity of a tank of dimension (8 m × 6m × 2.5m) is

a. 120000 liter b. 100000 liter c. 50000 liter d. 80000 liter

Answer: a

18. The ratio of the radii of two cylinders is 2:3 and the ratio of their heights is 5:3. The ratio of their volumes will be

a. 4:9 b. 9:4 c. 20:27 d. 27:20

Answer: c

19. One side of a parallelogram is 18cm and its distance from the opposite side is 8cm. The area of the parallelogram is

a. 160 cm^2 b. 230 cm^2 c. 144 cm^2 d. 140 cm^2

Answer: c

20. A square and a rectangle have equal areas. If their perimeters are P1 and P2 respectively then

a. P1 ≤ P2   b. P1 = P2   c. P1> P2   d. P1≥P2

Answer: a

21. Find the length of the altitude of an equilateral triangle of side 3 √3 cm

a. 27 cm   b. 9 √3 cm   c. 9 cm   d. 4.5 cm

Answer: d

22. The length of a rectangle in increased by 60%. By what percent would the width have to be decreased so as to maintain the same area

a. 37.5% b. 60% c. 75% d. 120%

Answer: a

23. A cone, a hemisphere and a cylinder stand on equal bases and have the same height. Find the ratio of their volumes. a. 3:2:1 b. 1:2:3 c. 3:1:2 d. 1:3:2

Answer: b

24. As air is pumped into a spherical balloon the radius increases from 6cm to 12cm. The ratio between volume of the balloon in the beginning and the end is

a. 1:8 b. 2:7 c. 8:1 d. 2:3

Answer: a

25. The difference between two parallel sides of a trapezium is 4cm. The perpendicular distance between them is 19cm. If the area of the trapezium is 475 cm2 , find the length of the parallel sides

a. 20 cm and 16 cm b. 27 cm and 23 cm c. 27 cm and 20 cm d. 25 cm and 23 cm

Answer: b

26. The perimeters of two squares are 40cm and 32cm. Find the perimeter of a third square whose area is equal to the difference of the areas of the two squares

a. 40 cm b. 36 cm c. 12 cm d. 24 cm

Answer: d

27. A river of 1.5m deep and 36m wide is flowing at the rate of 3.5km per hour. The amount of water that runs into the sea per minute is

a. 3150 m3 b. 31500 m3 c. 6300 m3 d. 63000 m3

Answer: a

28. The total surface area of a solid hemisphere of a diameter 2 cm is equal to

a. 12 cm2 b. 12π cm 2 c. 4π cm2 d. 3π cm2

Answer: d

29. The radius and height of cylinder and cone are equal. If the volume of cylinder is 120 cm3 , then the volume of cone is

a. 90 cm3 b. 40 cm3 c. 30 cm3 d. 100 cm3

Answer: b

30. The radii of two cones are in the ratio 2:1, their volumes are equal. Find the ratio of their heights.

a. 1:8 b. 1:4 c. 2:1 d. 4:1

Answer: b

31. A rectangular piece of paper has length 14π cm and breadth 10/π cm. A cylinder is formed by one rolling of the paper along its length. Then volume of the cylinder is

a. 980 cc b. 1960 cc c. 1400 cc d. 490 cc

Answer: d

32. 50 circular plates each of radius 7cm and thickness ½ cm are placed one above another to form a solid right circular cylinder. What is the total surface area of the cylinder so formed?

a. 1230 cm^2 b. 1332 cm^2 c. 1408 cm^2 d. 1560 cm^2

Answer: c

33. A drain cover is made from a square metal plate of side 40cm having 70 circular holes of diameter 1 cm each drilled in it. Find the area of the cover.

a. 1380 cm^2 b. 1545 cm^2 c. 1655 cm^2 d. 1820 cm^2

Answer: b

34. The inner and outer surface area of a hemispherical dome of a building needs to be painted. If the thickness of the dome is 5cm and the inner circumference of the base is 17.6cm, find the cost of painting it at the rate of Rs. 5 per sq.m

a. Rs. 480.2 b. Rs. 501.7 c. Rs. 255.3 d. Rs. 246.4

Answer: b

35. A flower garden is in the shape of a rhombus. The length of its diagonals are 18m and 25m. Find the area of the flower garden.

a. 25 m^2 b. 18 m^2 c. 225 m^2 d. 450 m^2

Answer: c

36. The ratio of area of 2 squares is 9:1 then the ratio of the perimeter is

a. 9:1 b. 3:1 c. 4:1 d. 1:9 Answer: b 2. In a cylinder, if radius is doubled and height is halved, then what happens to the curved surface area?

a. Halved b. Doubled c. Does not change d. four times

Answer: c

37. The length of side of a rhombus is 5m and one of its diagonal is 8m. Then what is the length of other diagonal?

a. 5m b. 7m c. 6m d. 8m

Answer: c

38. A wheel makes 1000 revolutions in covering a distance of 88Km. the radius of the wheel is

a. 7m b. 14m d. 16m d. 21m

Answer: b

39. The area (in sq. units) of the largest possible square inscribed in a circle of radius 2units is

a. 4 b. 8 c. 2π d. 4π

Answer: b

40. Water flows through a cylindrical pipe of diameter 5mm at 10m per minute and falls into a conical vessel having 40cm as diameter of its base and 24cm as its height. In how much time is this vessel filled up?

a. 48min 15sec b. 51min 12sec c. 52min 1 sec d. 55min

Answer: b

41. The sum of the interior angles of a hexagon is

a. 360 degree b. 240 degree c. 720 degree d. 180 degree

Answer: c

42. The volume of a wall is 0.576 cu.cm. The height of the wall is six times its breadth and length of the wall is twice the height. Then breadth of the wall is a. 22cm b. 24cm c. 20cm d. 18cm Answer: c

43. A courtyard 24m long and 15m broad is paved with bricks of dimensions 25cm and 12cm. The total number of bricks required is

a. 8000 b. 10000 c. 12000 d. 16000

Answer: c

44. A copper sphere of diameter 18cm is drawn into a wire of diameter 18cm. Then the length of the wire is

a. 12cm b. 18cm c. 20cm d. 14cm

Answer: a

45. A flower garden is in the shape of a rhombus. The length of its diagonals are 18m and 25m. Find the area of the flower garden.

a. 450 m^2 b. 225 m^2 c. 324 m^2 d. 18 m^2

Answer: b

46. A rectangular paper when folded into two congruent parts had a perimeter of 26 cm for each part folded along one set of sides and the same is 28cm when folded along the other set of sides. Then the area of the paper is

a. 60 sq.cm b. 100 sq.cm c. 80 sq.cm d. 70 sq.cm

Answer: c

47. If the side of a square is increased by 5cm, then the area increases by 165sq.cm. The side of the square is

a. 13 cm b. 14 cm c. 33 cm d. 12 cm

Answer: b

48. Two cones have their volumes in the ratio 3:1 and their heights are in the ratio 1:3 then the ratio of their radius is

a. 9:1 b. 27:1 c. 3:1 d. 1:3

Answer: c

49. If the radius of a circle is decreased by 50%, find the % decrease in its area.

a. 74% b. 75% c. 76% d. 95%

Answer: b

50. The surface area of a solid hemisphere is 2772 sq.cm. Find its total surface area.

a. 4158 b. 5544 c. 8316 d. 2772

Answer: a

51. The heights of two circular cones are in the ratio 2:3 and the perimeter of their bases are 3:5. The ratio of their volumes is

a. 2:5 b. 6:15 c. 6:25 d. 3:5

Answer: c

52. Ravi wants to stitch a cover for his CPU whose length, breadth and height are 20cm, 45cm and 50cm respectively. The amount he has to pay if it costs Rs.50 per square meter is

a. Rs.37 b. Rs.35 c. Rs.40 d. Rs.50

Answer: a

53. The volume of a cube is 125 cu.cm. The surface are of the cube (in sq.cm) is

a. 625 b. 125 c. 150 d. 100

Answer: c

54. The surface area of a cube is 2400 sq.cm. Then its volume is

a. 6000 cm^3 b. 8000 cm^3 c. 7200 cm^3 d. 9600 cm^3

Answer: b

55. 12 spheres of the same size are made from melting a solid cylinder of 16 cm diameter and 2 m height then the diameter of each sphere is

a. 1 cm b. 2 cm c. 3 cm d. 4 cm

Answer: d

56. A rectangular carpet has an area of 60 sq.m. Its diagonal and longer side together equal 5 times the shorter side. The length of the carpet is

a. 5 m b. 12 m c. 13 m d. 14.5 m

Answer: b

57. The number of small cubes with edge 10cm that can be accommodated in a cubical box of edge 1m is

a. 10 b. 100 c. 1000 d. 10000

Answer: c