ELEMENTARY MENSURATION - II

**1. Find the volume of cuboid 22 cm, by 12 cm, by 7.5 cm**

(a) 1980 cu cm (b) 1890 cu cm

(c) 1680 cu cm (d) None of these

**2. A wooden box of dimensions 8 m 7 m 6 m is to carry rectangular boxes of dimensions 8 cm 7 cm 6 cm. The maximum number of boxes that can be carried in the wooden box, is:**

(a) 9800000 (b) 7500000

(c) 1000000 (d) 1200000

**3. Find the weight (to the nearest kilogram) of an iron rod of square section, 10 metres long and 2.3 cm broad. A cubic cm of iron weighs 7.207 grams.**

(a) 40 kg (b) 39 kg (c) 38 kg (d) Data inadequate

**4. The area of a side of a box is 120 sq cm. The area of the other side of the box is 72 sq cm. If the area of the upper surface of the box is 60 sq cm then find the volume of the box.**

(a) 259200 cm3 (b) 86400 cm3

(c) 720 cm3 (d) Can’t be determined

**5. The area of the cardboard (in cm2) needed to make a box of size 25 cm 15 cm 8 cm will be:**

(a) 390 (b) 1000 (c) 1390 (d) 2780

**6. The sum of length, breadth and height or a cuboid is 5 cm and its diagonal is 4 cm long. Find the total surface area of the cuboid.**

(a) 9 sq cm (b) 3 sq cm

(c) 10 sq cm (d) Data inadequate

**7. A cube has a diagonal 17.32 cm long. Find the volume of the cube.**

(a) 1000 cu cm (b) 1500 cu cm

(c) 2000 cu cm (d) 2500 cu cm

**8. The circumference of the base of a cylinder is 6 metres and its height is 44 metres. Find the volume.**

(a) 126 cub m (b) 128 cub m

(c) 136 cub m (d) None of these

**9. How many cubic metres of earth must be dug out to sink a well 35 metres deep and 4 metres in diameter?**

(a) 220 cub m (b) 660 cub m

(c) 440 cub m (d) Can’t be determined

**10. The area of the curved surface of a cylinder is 4400 cm2 and the circumference of its base is 110 cm. Find the height and the volume of the cylinder.**

(a) 40 cm, 38500 cu cm (b) 45 cm, 38500 cu cm

(c) 40 cm, 38500 cu cm (d) 45 cm, 38560 cu cm

**11. The sum of the radius of the base and the height of a solid cylinder is 37 m. If the total surface area of the cylinder be 1628 sq m, find the volume.**

(a) 4620 cu m (b) 4630 cu m

(c) 4520 cu m (d) 4830 cu m

**12. The largest sphere is carved out of a cube of side 7 cm. Find the volume of the sphere (Take π = 3014).**

(a) 179.6 cu cm (b) 180.6 cu cm

(c) 176.9 cu cm (b) 189.6 cu cm

**13. Find the weight of a iron shell, the external and internal diameters of which are 13 cm and 10 cm respectively, if 1 cu cm of iron weighs 8 gms.**

(a) 6 kg (b) 6.015 kg (c) 5.016 kg (d) 5.015 kg

**14. How many bullets can be made out of a cube of lead whose edge measures 22 cm, each bullet being 2 cm in diameter?**

(a) 5324 (b) 2662 (c) 1347 (d) 2541

**15. Find the curved surface area of a hemisphere of radius 28 cm.**

(a) 4928 sq cm (b) 4298 sq cm

(c) 4982 sq cm (d) None of these

**16. The height of a cone is 16 cm and the diameter of its base is 24 cm. Find its slant height.**

(a) 10 cm (b) 20 cm (c) 15 cm (d) 25 cm

**17. The diameter of base of a right circular cone is 6 cm and its perpendicular height is 3 cm. Find the slant height of the cone.**

(a) 6 cm (b) 5 cm (c) 6 cm (d) cm

**18. A cone of height 7 cm and base radius 3 cm is carved from a rectangular block of wood 10 cm 5 cm 2 cm. Calculate the percentage of wood wasted.**

(a) 66% (b) 37% (c) 67% (d) 34%

**19. The height of a cone is 16 cm and the diameter of its base is 24 cm. Find the area of curved surface of the cone.**

(a) 754.28 sq cm (b) 754.82 sq cm

(c) 774.28 sq cm (d) None of these

**20. Radius of the base of a right circular cone is 30 cm and the height of the cone is 40 cm. Find the total surface area of the cone.**

(a) 240 π sq cm (b) 2400 π sq cm

(c) 1600 π sq cm (d) 1680 π sq cm

**21. The circumference of one end of a frustum of a right circular cone is 48 cm and of the other end 34 cm, the height of the frustum is 10 cm, find its volume.**

(a) 1250 cub cm approx (b) 1850 cub cm approx

(c) 1350 cub cm approx (d) 1360 cub cm approx

**22. The surface of a cube is 1176 cm2 . The volume of this cube is**

(a) 7056 cm3 (b) 4704 cm3

(c) 2744 cm3 (d) 3528 cm3

**23. Three cubes of metal whose edges are 30, 40 and 50 cm respectively are melted and formed into a single cube. If there be no loss of metal in the process find the side of the new cube.**

(a) 60 cm (b) 64 cm (c) 90 cm (d) 80 cm

**24. A cube of sides 6 cm is melted and smaller cubes of sides 3 cm each are formed. How many such cubes are possible?**

(a) 16 (b) 8

(c) 27 (d) Data inadequate

**25. The internal diameter of an iron pipe is 6 cm and the length is 2.8 metres. If the thickness of the metal be 5 mm and 1 cu cm of iron weighs 8 gm, find the weight of the pipe.**

(a) 288.2 kg (b) 22.88 kg

(c) 822.2 kg (d) None of these

**26. A copper sphere of diameter 12 cm is drawn into a wire of diameter 2 cm. Find the length of the wire.**

(a) 288 cm (b) 284 cm

(c) 286 cm (d) None of these

**27. A cylinder of radius 6 cm and height 8 cm is melted and the same mass is used to create a sphere. What will be the radius of the sphere?**

(a) 7 cm (b) 4 cm

(c) 6 cm (d)

**28. A cylinder of radius 15 cm and height 20 cm is melted and the same mass is used to create a sphere. What will be the radius of the sphere?**

(a) 12 cm (b) 18 cm

(c) 15 cm (d) Data inadequate

**29. A cylinder of length 1 metre and diameter 15 cm is melted down and cast into spheres of diameter 5 cm. How many spheres can be made?**

(a) 270 (b) 260 (c) 290 (d) 370

**30. There is a cone of radius 18 cm and height 24 cm. Find the radius of the greatest sphere that can be carved out of that cone.**

(a) 9 cm (b) 12 cm

(c) 6 cm (d) Can’t be determined

**31. The curved surface areas of two spheres are in the ratio 4 : 5. Find the ratio of their volumes.**

(a) 8 : 5 (b) 8 : 5 (c) 8 : 5 (d) 5 : 8

**32. The radii of two cylinders are in the ratio of 2 : 3 and their heights are in the ratio 5 : 3. The ratio of their volumes is:**

(a) 27 : 20 (b) 20 : 27 (c) 4 : 9 (d) 9 : 4

**33. If the radius of a cylinder becomes 3 times and the height times, what is the ratio between the new curved surface area and the previous curved surface area of the cylinder?**

(a) 1 : 1 (b) 1 : 2

(c) 2 : 1 (d) Can’t be determined

**34. A right-angled triangle having base 6 metres and height equal to 8 metres, is turned around the height. Find the volume of the cone thus formed. Also find the surface area.**

(a) 96 π , 60 π (b) 48 π , 60 π

(c) 96 π , 120 π (d) 48 π , 30 π

**35. A right-angled triangle having base 9 metres and height equal to 12 metres, is turned around the base. Find the volume of the cone thus formed. Also find the surface area.**

(a) 432 π, 180 π (b) 462 π, 190 π

(c) 432 π, 150 π (d) None of these

**36. The length, breadth and height of a cuboid are made 2, 3 and 4 times respectively. Find the percentage increase in its volume.**

(a) 230% (b) 23%

(c) 2300% (d) data inadequate

**37. If only length of a cuboid is made 4 times then, find the percentage increase in its volume.**

(a) 6300% (b) 640% (c) 300% (d) None of these

**38. If the length and breadth of a cuboid are made 3 and 6 times respectively then, find the percentage increase in its volume.**

(a) 1900% (b) 1700% (c) 170% (d) 190%

**39. Each edge of a cube is increased by 10%. What is the percentage increase in its volume.**

(a) 20% (b) 21% (c) 20.5% (d) 22%

**40. The radius of a right circular cylinder is decreased by 5% but its height is increased by 10%. What is the percentage change in its volume?**

(a) 0.725% increase in volume

(b) Remains unchanged

(c) 0.725% decrease in volume

(d) Data inadequate

**41. A closed rectangular box has inner dimensions 24 cm by 12 cm by 10 cm. Calculate its capacity and the area of tinfoil needed to line its inner surface.**

(a) 2680 cu cm, 1296 sq cm

(b) 2880 cu cm, 1396 sq cm

(c) 2880 cu cm, 1296 sq cm

(d) 2860 cu cm, 1296 sq cm

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| **Answer keys** | | | | |
| 1. (a)  2. (c)  3. (c)  4. (c)  5. (c)  6. (a)  7. (a)  8. (a)  9. (c) | 10. (a)  11. (a)  12. (a)  13. (c)  14. (d)  15. (a)  16. (b)  17. (a)  18. (d) | 19. (a)  20. (b)  21. (c)  22. (c)  23. (a)  24. (b)  25. (b)  26. (a)  27. (c) | 28. (c)  29. (a)  30. (a)  31. (c)  32. (b)  33. (a)  34. (a)  35. (a)  36. (c) | 37. (c)  38. (b)  39. (b)  40. (c)  41. (c) |