(Question No-1 to 10 are 1 mark questions)
Choose the correct option

1. Volume of a cube having sides 9cm is
   (a) $81cm^3$ (b) $728cm^3$ (c) $729cm^3$ (d) $486cm^3$

2. The volume of a cone is
   a) $\frac{2}{3}\pi r^2 h$ b) $\frac{1}{3}\pi r^2 h$ c) $\pi r^2 h$ d) $2\pi r^2 h$

3. Find the volume of the sphere having diameter 2.1cm
   a) $4.851cm^3$ b) $48.51cm^3$ c) $4.581cm^3$ d) $45.81cm^3$

4. If the radius of a sphere is 2r then its volume will be
   a) $\frac{4}{3}\pi r^3$ b) $4\pi r^3$ c) $\frac{8\pi r3}{3}$ d) $\frac{32}{3}\pi r^3$

Fill in the blanks

5. The relation between slant height, height and radius of a cone is _____
6. The volume of air inside a dome having radius 0.7 cm is _____

Very short answer type questions

7. What is the capacity of a cylinder having radius 0.5cm and height 0.4cm?
8. If the length, breath and height of a cuboid is 1cm, 0.1cm and 0.01cm. Find its volume.
9. Write the relation between volume of a cylinder and a cone.
10. If the volume and height of a cone are 500 cm^3 and 15 cm, then find the radius of base of the cone.

(Question No-11 to 20 are 2 marks questions)

Short answer type question-I

11. How many liters of milk can a hemispherical bowl of diameter 10.5cm hold?
12. Find the volume of a sphere whose surface area is 154 cm².
13. Find the capacity of a conical vessel (in litre) having height 8cm and slant height 10cm.
14. The volumes of two hemispheres are in the ratio 27:125. Find the ratio of the radii.
15. The radius of the moon is approximately one-fifth of the radius of the planet. Find the ratio of their volumes.
16. Three cubes each with 8cm edge are joined end to end. Find the total volume of the cuboid formed.

17. If the total surface area of a cube is 726 cm^2, then find its volume.
18. A square plate is side 'x' cm is 8mm thick. If its volume is 22880 cm^3. Find the value of 'x'.
19. The total surface area of solid cylinder is 616cm^2. And radius is 7cm, find the height.
20. Each face of a cube has perimeter equal to 32cm. Find the volume of it.

(Question No-21 to 25 are 3 marks questions)
Short answer type question-II
21. Find the volume of a hollow cylinder having diameter 10cm and 8cm and height 7cm.
22. The volume of a right circular cone is 9856cm^3,if the diameter of the base is 28 cm, find its height.
23. A semicircular sheet of metal of diameter 28 cm is best to form an open conical cup. Find the capacity of the cup.
24. The edges of three cubes of metal are 3cm, 4cm, 5cm. they are melted and formed into a single cube. Find the edge of the new cube.
25. How many litres of water flows out of a pipe of cross-section area 5cm^2 in it if the speed of the water in the pipe is 30 cm/s?

(Question No-26 to 30 are 4 marks questions)
Long answer type question
26. A brick is of dimension 24cm x 12cm x 8cm. How many bricks are required to make a wall of dimension 10m x 24m x 4m?
27. If the diameter and height of a cylinder is 8m and 4m, then find capacity of it in litres.
28. If the volume of a cylinder is 6237 cm^3, and height 4.5 cm, find the radius of it
29. Find the capacity (in litre) of a conical vessel having height 8cm and slant height 10cm.
30. A capsule of medicine is in the shape of a sphere of diameter 3.5mm. How much medicine (in mm^3) is needed to fill this capsule?

(Question No-1 to 5 are 1 mark questions)

Choose the correct option

1. How much ice-cream can be put in a right circular cone with radius = 3.5cm and height =12cm is.
   a) $264cm^2$ b) $246cm^3$ c) $244xm^3$ d) $266cm^3$

2. If the radius of a sphere is 0.63m, then its volume is
   a) $1.0748 \ m^3$ b) $1.0478m^2$ c) $1.0874cm^3$ d) $1.0847m^3$

Fill in the blanks

3. The ratio of the volume of a sphere to hemisphere is _____.
4. The volume of a hemispherical bowl of radius 2.5cm is _____.

Very short answer type questions

5. If a spherical ball is emerged in a cylindrical container which is full of water, then find the volume of water overflowes?

(Question No-6 to 10 are 2 marks questions)

Short answer type question-I

6. What is the capacity of a conical vessel having height 6cm and slant height 10cm.
7. The circumference of the edge of a hemispherical bowl is 132 cm find the volume of the bowl.
8. If the radius of a cylinder is doubled and height is halved then find its new volume,
9. If the dimensions of a cuboid are in the ratio 1:2:3, and TSS is $88m^2$, find its volume
10. A shopkeeper has one iron ball of diameter 20 cm. with the same material, how many iron balls of diameter 5cm can be made.

(Question No-11 to 15 are 3 marks questions)

Short answer type question-II

11. The volumes of two spheres are in the ratio 64:27. Find the ratio of their radii.
12. The radius and height of a right circular cone are in ratio 5:12 respectively. If its volume is $314m^3$, then find the slant height and the radius.
13. If the height and radius of a cone are tripled then find the ratio of volume of new cone and original cone.

14. If A_1, A_2, A_3 denote the areas of 3 adjacent faces of a cuboid, then find the volume of it.
15. If the ratio of base radius two cylinders are in the ratio of 2:3 and their heights are in the ratio of 5:3. Find the ratio of their volumes

(Question No-16 to 20 are 4 marks questions)

Long answer type question

16. A cloth having area of $165m^2$ is shaped in the form of a conical tent of radius 5m. Find the volume of it?
17. The diameter of a sphere is decreased by 25%. By what % does its volume decreased.
18. A semicircular sheet of metal of diameter 28 cm is bent into an o[en conical cup. Then find the capacity of the cup.
19. If the length of the diagonal of a cube is $6\sqrt{3m}$, find the volume of it.
20. From a wooden cylindrical block whose diameter is equal to its height ,a sphere of maximum possible volume is curved out. Then find the ratio of the volumes of the utilized wood to that of the wasted wood.

SUB-MATHEMATICS, CLASS-IX
CHAPTER- (VOLUME)
WORSHEET (ADVANCED)

(Question No-1 to 5 are 3 mark questions)

1. Volume of a right circular cone is $\frac{2200}{7}$ cm^2 and its diameter is 10cm. find its curve S.A. ($\pi = \frac{22}{7}$)

2. A wood cutter desires to make dusters for schools. He plans to make duster of dimensions (10cm x 4 cm x 3cm). How many dusters can be made from a wooden plank of dimensions 4m x 3m x 1m?

3. Along a bridge, 100 cylindrical iron pillars are constructed. Each pillar has base radius 14cm and height 18cm. find the total cost of iron used to make this pillars at the rate of Rs 1200 per m^3. ($\pi = \frac{22}{7}$)

4. If the height of a cone is halved, then find the % of increase in its volume.

5. The volume of a cuboid whose sides are in the ratio of 1:2:4 is same as that of a cube. Then what is the length of diagonals of cuboid to that of the cube?

(Question No-6 to 10 are 4 marks questions)

6. A hemispherical bowl is made of 0.50 cm thick brass. The inner radius of the bowl is 6cm find the volume of the bowl.

7. A semicircular sheet of tin is formed into a cone. Show that the volume of cone so formed is given by $\frac{\sqrt{3}}{24}\pi r^3$, where r is the radius of the semi-circular.

8. A cylinder of radius 12cm contains water to a depth of 20cm. A spherical iron ball is dropped into the cylinder and thus the level of water is raised by 6.75cm. find the radius of the ball.

9. Find the relation between volume of a cone, volume of a hemisphere and volume of sphere if they have same radius and same height. And why volume of cone is $\frac{1}{3}$ of volume of a cylinder?

10. The height of a right circular cylinder is equal to its diameter, if it is melted and recast into a sphere of radius equal to the radius of the cylinder; find the volume of unused material.