

Surface Area and Volume

MM 20

Time 45 minutes

Paper Prepared by

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1 mark each

1. A rectangular sheet of paper 11cm by 10 cm is folded along length to form a cuboid. Find its volume
2. A metallic sphere of radius 8.4 cm is melted and recast into a cylinder of radius 6cm. Find its height.
3. Surface Area of a 3 dimensional object is _____
4. Radius of a cylinder is doubled and height halved. Then the ratio of volumes of two cylinders is _____

2 marks each

5. A cylinder, cone and a hemisphere are of equal base and same height. Find ratio of their volumes.
6. If h , c and v are respectively the height, curved surface and volume of cone. Prove that $3\pi v h^3 - c^2 h^2 + 9v^2 = 0$

3 marks each

7. A conical vessel is of radius 12cm and height 16cm is completely filled with water and its size is such that when it touches the sides it is just immersed. What fraction of water overflows?
8. The sum of the volumes of three cubes is equal to three times the volume of a cuboid, given that the edges of the three cubes are equal to the length, breadth and height of cuboid respectively. Prove that the cuboid is a cube itself.

6 marks each

9. A triangle with angles 30° , 60° and 90° is revolved about the hypotenuse which is 168 cm long. Find the volume of the solid generated. Also the the total surface area.

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