

Model Question Paper**Mensuration - Part III**

10th Standard

MathsReg.No. :

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I. Answer all the questions.

II. Use blue pen only.

III. Question number 15 is compulsory.

Time : 01:00:00 Hrs

Total Marks : 40

5 x 1 = 5

Part-A

- 1) The ratios of the respective heights and the respective radii of two cylinders are 1:2 and 2:1 respectively. Then their respective volumes are in the ratio
(a) 4:1 (b) 1:4 (c) 2:1 (d) 1:2
- 2) If the radius of a sphere is 2 cm, then the curved surface area of the sphere is equal to
(a) $8\pi\text{cm}^2$ (b) 16cm^2 (c) $12\pi\text{cm}^2$ (d) $16\pi\text{cm}^2$
- 3) The total surface area of a solid hemisphere of diameter 2 cm is equal to
(a) 12cm^2 (b) $12\pi\text{cm}^2$ (c) $4\pi\text{cm}^2$ (d) $3\pi\text{cm}^2$
- 4) If the volume of a sphere is cu.cm $\frac{9}{16}\pi$, then its radius is
(a) $\frac{4}{3}\text{cm}$ (b) $\frac{3}{4}\text{cm}$ (c) $\frac{3}{2}\text{cm}$ (d) $\frac{2}{3}\text{cm}$
- 5) The surface areas of two spheres are in the ratio of 9 : 25. Then their volumes are in the ratio
(a) 81 : 625 (b) 729 : 15625 (c) 27 : 75 (d) 27 : 125.

Part-B

5 x 2 = 10

- 6) Radii of two solid hemispheres are in the ratio 3 : 5. Find the ratio of their curved surface areas and the ratio of their total surface areas.
- 7) The volume of a solid right circular cone is 4928 cu. cm. If its height is 24 cm, then find the radius of the cone. (Take $\pi = \frac{22}{7}$)
- 8) Find the volume of a sphere-shaped metallic shot-put having diameter of 8.4 cm. (Take $\pi = \frac{22}{7}$)
- 9) A cone, a hemisphere and cylinder have equal bases. If the heights of the cone and a cylinder are equal and are same as the common radius, then find the ratio of their respective volumes.
- 10) If the volume of a solid sphere is 7241 $\frac{1}{7}$ cu.cm, then find its radius. (Take $\pi = \frac{22}{7}$)

Part-C

5 x 5 = 25

- 11) The external surface area of a hollow cylinder is 540π sq.cm. Its internal diameter is 16 cm and height is 15 cm. Find the total surface area.
- 12) The external diameter of a cylindrical shaped iron pipe is 25 cm and its length is 20 cm. If the thickness of the pipe is 1cm, find the total surface area of the pipe
- 13) The radius and height of a right circular solid cone are 7 cm and 24 cm respectively. Find its curved surface area and total surface area.
- 14) If the vertical angle and the radius of a right circular cone are 60° and 15 cm respectively, then find its height and slant height.
- 15) a) A heap of paddy is in the form of a cone whose diameter is 4.2 m and height is 2.8 m. If the heap is to be covered exactly by a canvas to protect it from rain, then find the area of the canvas needed.

(OR)

- b) The central angle and radius of a sector of a circular disc are 180° and 21 cm respectively. If the edges of the sector are joined together to make a hollow cone, then find the radius of the cone.
