

Model Question Paper**Mensuration - Part V**

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) If the height and the base area of a right circular cone are 5 cm and 48 sq. cm respectively, then the volume of the cone is equal to
(a) 240cm^3 (b) 120cm^3 (c) 80cm^3 (d) 480cm^3
- 2) 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
- 3) If the radius of a sphere is half of the radius of another sphere, then their respective volumes are in the ratio
(a) 1:8 (b) 2:1 (c) 1:2 (d) 8:1
- 4) Curved surface area of solid sphere is 24cm^2 . If the sphere is divided into two hemispheres, then the total surface area of one of the hemispheres is
(a) 12cm^2 (b) 8cm^2 (c) 16cm^2 (d) 18cm^2
- 5) Two right circular cones have equal radii. If their slant heights are in the ratio 4:3, then their respective curved surface areas are in the ratio
(a) 16:9 (b) 2:3 (c) 4:3 (d) 3:4

Part-B

5 x 2 = 10

- 6) The volume of a cone with circular base is $216\pi\text{ cu.cm}$. If the base radius is 9 cm, then find the height of the cone.
- 7) The outer and the inner radii of a hollow sphere are 12 cm and 10 cm. Find its volume.
- 8) Find the volume of the largest right circular cone that can be cut out of a cube whose edge is 14 cm.
- 9) The radius of a spherical balloon increases from 7 cm to 14 cm as air is being pumped into it. Find the ratio of volumes of the balloon in the two cases.
- 10) A solid wooden toy is in the form of a cone surmounted on a hemisphere. If the radii of the hemisphere and the base of the cone are 3.5 cm each and the total height of the toy is 17.5 cm, then find the volume of wood used in the toy. (Take $\pi = \frac{22}{7}$)

Part-C

5 x 5 = 25

- 11) A hollow cylindrical pipe is of length 40 cm. Its internal and external radii are 4 cm and 12 cm respectively. It is melted and cast into a solid cylinder of length 20 cm. Find the radius of the new solid.
- 12) An iron right circular cone of diameter 8 cm and height 12 cm is melted and recast into spherical lead shots each of radius 4 mm. How many lead shots can be made?
- 13) A right circular cylinder having diameter 12 cm and height 15 cm is full of ice cream. The ice cream is to be filled in cones of height 12 cm and diameter 6 cm, having a hemispherical shape on top. Find the number of such cones which can be filled with the ice cream available.
- 14) A container with a rectangular base of length 4.4 m and breadth 2 m is used to collect rain water. The height of the water level in the container is 4 cm and the water is transferred into a cylindrical vessel with radius 40 cm. What will be the height of the water level in the cylinder?
- 15) a) A cylindrical bucket of height 32 cm and radius 18 cm is filled with sand. The bucket is emptied on the ground and a conical heap of sand is formed. If the height of the conical heap is 24 cm, find the radius and slant height of the heap.

(OR)

- b) A cylindrical shaped well of depth 20 m and diameter 14 m is dug. The dug out soil is evenly spread to form a cuboid-platform with base dimension 20 m x 14 m. Find the height of the platform.
