RAVI MATHS TUITION CENTER ,GKM COLONY, CH- 82. PH: 8056206308

Mensuration FULL TEST

10th Standard

Maths

Reg.No. : | | | | | | |

Exam Time : 02:30:00 Hrs Total Marks : 1

14 x 1 =

1) The curved surface area of a right circular cone of height 15 cm and base diameter 16 cm is
(a) 60π cm^2 (b) 68π cm^2 (c) 120π cm^2 (d) 136π cm^2

2) If two solid hemispheres of same base radius r units are joined together along their bases, then curved surface area of this new solid is
(a) $4\pi r^2$ sq.units (b) $6\pi r^2$ sq.units (c) $3\pi r^2$ sq.units (d) $8\pi r^2$ sq.units

3) If the radius of the base of a right circular cylinder is halved keeping the same height, then the ratio of tl volume of the cylinder thus obtained to the volume of original cylinder is
(a) 1:2 (b) 1:4 (c) 1:6 (d) 1:8

4) The total surface area of a cylinder whose radius is $\frac{1}{3}$ of its height is
(a) $\frac{9\pi h^2}{8}$ sq.units (b) $24\pi h^2$ sq.units (c) $\frac{8\pi h^2}{9}$ sq.units (d) $\frac{56\pi h^2}{9}$ sq.units

5) In a hollow cylinder, the sum of the external and internal radii is 14 cm and the width is 4 cm. If its heig is 20 cm, the volume of the material in it is
(a) 5600π cm^3 (b) 11200π cm^3 (c) 56π cm^3 (d) 3600π cm^3

6) If the radius of the base of a cone is tripled and the height is doubled then the volume is
(a) made 6 times (b) made 18 times (c) made 12 times (d) unchanged

7) The total surface area of a hemi-sphere is how much times the square of its radius.
(a) π (b) 4π (c) 3π (d) 2π

8) A solid sphere of radius x cm is melted and cast into a shape of a solid cone of same radius. The height the cone is
(a) 3 x cm (b) x cm (c) 4 x cm (d) 2x cm

9) A frustum of a right circular cone is of height 16cm with radii of its ends as 8cm and 20cm. Then, the volume of the frustum is
(a) 3328π cm^3 (b) 3228π cm^3 (c) 3240π cm^3 (d) 3340π cm^3

10) A shuttle cock used for playing badminton has the shape of the combination of
(a) a cylinder and a sphere (b) a hemisphere and a cone (c) a sphere and a cone (d) frustum of a cone and a hemisphere

11) A spherical ball of radius r_1 units is melted to make 8 new identical balls each of radius r2 units. Then r r_2: is
(a) 2:1 (b) 1:2 (c) 4:1 (d) 1:4

12) The volume (in cm^3) of the greatest sphere that can be cut off from a cylindrical log of wood of base radius 1 cm and height 5 cm is
(a) $\frac{4}{3}\pi$ (b) $\frac{10}{3}\pi$ (c) 5π (d) $\frac{20}{3}\pi$

13) The height and radius of the cone of which the frustum is a part are h_1 units and r_1 units respectively. Height of the frustum is h_2 units and radius of the smaller base is r_2 units. If $h_2 : h_1 = 1:2$ then $r_2:r_1$ is
(a) 1:3 (b) 1:2 (c) 2:1 (d) 3:1

14) The ratio of the volumes of a cylinder, a cone and a sphere, if each has the same diameter and same hei is
(a) 1:2:3 (b) 2:1:3 (c) 1:3:2 (d) 3:1:2

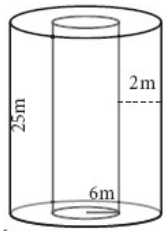
ANSWER 10 10X2 =

15)

A cylindrical drum has a height of 20 cm and base radius of 14 cm. Find its curved surface area and the total surface area.

16) The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2 . Find the diameter of the cylinder.

17) If one litre of paint covers 10 m^2, how many litres of paint is required to paint the internal and external surface areas of a cylindrical tunnel whose thickness is 2 m, internal radius is 6 m and height is 25 m.

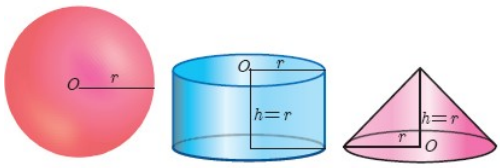


18) If the total surface area of a cone of radius 7cm is 704 cm^2, then find its slant height.

19) Find the diameter of a sphere whose surface area is 154 m^2.

20) The radius of a spherical balloon increases from 12 cm to 16 cm as air being pumped into it. Find the ratio of the surface area of the balloons in the two cases.

21) A sphere, a cylinder and a cone (Fig.7.20) are of the same radius, where as cone and cylinder are of san height. Find the ratio of their curved surface areas.



22) The slant height of a frustum of a cone is 5 cm and the radii of its ends are 4 cm and 1 cm. Find its curv surface area.

23) Find the volume of a cylinder whose height is 2 m and whose base area is 250 m^2.

24) The volume of a solid right circular cone is 11088 cm^3. If its height is 24 cm then find the radius of the cone.

25) The ratio of the volumes of two cones is 2:3. Find the ratio of their radii if the height of second cone is double the height of the first.

26) The volume of a solid hemisphere is 29106 cm^3. Another hemisphere whose volume is two-third of the above is carved out. Find the radius of the new hemisphere.

27) If the radii of the circular ends of a frustum which is 45 cm high are 28 cm and 7 cm, find the volume o the frustum.

28) A metallic sphere of radius 16 cm is melted and recast into small spheres each of radius 2 cm. How mai small spheres can be obtained?

ANSWER 10 10 X 5 =

29) The radius and height of a cylinder are in the ratio 5:7 and its curved surface area is 5500 sq.cm. Find it radius and height.

30) A solid iron cylinder has total surface area of 1848 sq.m. Its curved surface area is five – sixth of its tot surface area. Find the radius and height of the iron cylinder.

31) A girl wishes to prepare birthday caps in the form of right circular cones for her birthday party, using a sheet of paper whose area is 5720 cm^2, how many caps can be made with radius 5 cm and height 12 cm.

32) Th e radius of a sphere increases by 25%. Find the percentage increase in its surface area.

33)

Th e frustum shaped outer portion of the table lamp has to be painted including the top part. Find the tot cost of painting the lamp if the cost of painting 1 sq.cm is Rs.2.

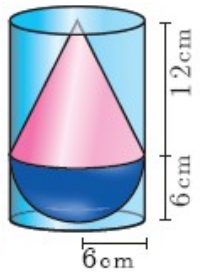
34) A 14 m deep well with inner diameter 10 m is dug and the earth taken out is evenly spread all around th well to form an embankment of width 5 m. Find the height of the embankment.

35) A right angled triangle whose sides are 6 cm, 8 cm and 10 cm is revolved about the sides containing the right angle in two ways. Find the difference in volumes of the two solids so formed.

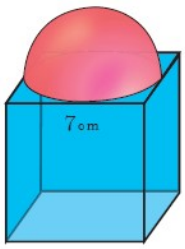
36) A vessel is in the form of a hemispherical bowl mounted by a hollow cylinder. The diameter is 14 cm a the height of the vessel is 13 cm. Find the capacity of the vessel.

37) From a solid cylinder whose height is 2.4 cm and the diameter 1.4 cm, a cone of the same height and same diameter is carved out. Find the volume of the remaining solid to the nearest cm^3.

38) A solid consisting of a right circular cone of height 12 cm and radius 6 cm standing on a hemisphere of radius 6 cm is placed upright in a right circular cylinder full of water such that it touches the bottom. Fir the volume of the water displaced out of the cylinder, if the radius of the cylinder is 6 cm and height is 1 cm.



39) As shown in figure a cubical block of side 7 cm is surmounted by a hemisphere. Find the surface area o the solid.

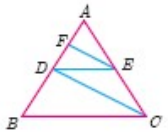


40) Water is flowing at the rate of 15 km per hour through a pipe of diameter 14 cm into a rectangular tank which is 50 m long and 44 m wide. Find the time in which the level of water in the tanks will rise by 21 cm.

41) The internal and external diameter of a hollow hemispherical shell are 6 cm and 10 cm respectively. If i is melted and recast into a solid cylinder of diameter 14 cm, then find the height of the cylinder.

42) A hemi-spherical hollow bowl has material of volume $\frac{436\pi}{3}$ cubic cm. Its external diameter is 14 cm. Fi its thickness.

43) a) In figure DE||BC andCD. Prove that AD^2=AB X AF



(OR)

b) Construct a $\triangle$ PQR such that QR = 6.5 cm, $\angle$ P=60^{o}and the altitude from P to QR is of length 4.5 c

44) a) Draw the graph of $y = x^2 + 3x + 2$ and use it to solve $x^2 + 2x + 1 = 0$

(OR)

b) Draw the graph of $y = 2x^2 - 3x - 5$ and hence solve $2x^2 - 4x - 6 = 0$

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