SHIKSHA CLASSES

Subject : Geometry	**Question Paper**	Total Marks : 20
Class : X	**7. Mensuration**	Time : 1 Hour

Q.1:A) **Choose the correct alternative from the following questions.**   2

  1) **If measure of an arc of a circle is 160^0 and its length is 44cm, find the circumference of the circle.**

  a) 66cm   b) 44cm   c) 160cm   d) 99cm

  2) **Find the side of a cube of volume 1m³.**

  a) 1cm   b) 10cm   c) 100cm   d) 1000cm

: B) Solve the following questions.   1

  1) What is the area of a sector whose arc length and radius are 22cm and 7cm respectively?

Q.2: A) Attempt any ONE of the following.   2

  1) Find the volume of a cone if the radius of its base is 1.5cm and its perpendicular height is 5cm.

    Radius (r) = ☐ cm, height (h) = ☐ cm.

    Volume of cone = ☐

$$= \frac{1}{3} \times \frac{22}{7} \times 1.5 \times 1.5 \times 1.5$$

$$= \frac{82.5}{7}$$

$$= \boxed{} \text{cm}^3$$

  2) Find the total surface area of a cylinder if the radius of it's base is 5cm and height is 40cm.

: B) Attempt any ONE of the following.   2

  1) Radius of a circle is 10cm. Measure of an arc of the circle is 54^0. Find the area of the sector associated with the arc.

  2) The radii of ends of a frustum are 14cm and 6cm respectively and it's height is 6cm. Find its curved surface area.

Q.3: A) Attempt any ONE of the following.   3

1) How many solid cylinders of radius 10cm and height 6cm can be made by melting a solid sphere of radius 30cm?

2) A bullet is frustum shaped. Its height is 28cm. Radii of circular faces are 12cm and 15cm.

Find the capacity of the bucket. $\left(\pi = \dfrac{22}{7}\right)$

$r_1 = \boxed{}$ cm, $r_2 = \boxed{}$ cm, $h = \boxed{}$ cm

capacity of bucket = volume of frustum

$$= \frac{1}{3}\pi h (r_1^2 + r_2^2 + r_1 \times r_2)$$

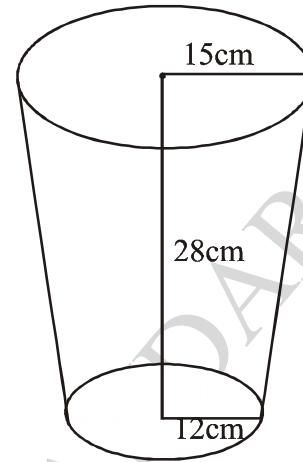$$= \frac{1}{3} \times \frac{22}{7} \times 28 \; \boxed{}$$

$$= \frac{22 \times 4}{3} \times 225 + 144 + 180$$

$$= \frac{22 \times 4}{3} \times 549$$

$$= 88 \times 183$$

$$= 16104 \text{ cm}^3$$

$$= \boxed{} \text{ lit.}$$

Capacity of bucket is $\boxed{16.104}$ **litre.**
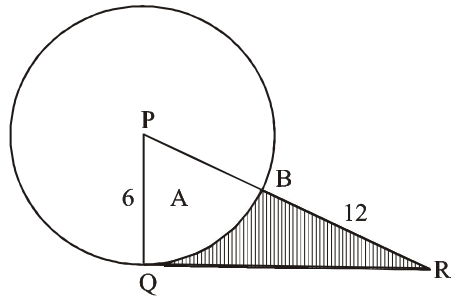
: B) **Attempt any ONE of the following.**   3

1) The area of a sector of a circle of 6cm radius is 15π sq.cm find the measure of the arc and length of the arc corresponding to the sector.

2) A cylinder and a cone have equal bases. The height of the cylinder is 3cm and the area of its base is 100cm². The cone is placed upon the cylinder volume of the solid so formed is 500 cm³. Find the total height of the figure.
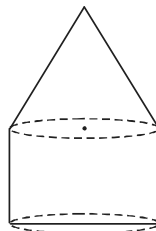
Q. 4 : Attempt any ONE of the following.   4

1) The circumferences of circular faces of a frustum are 132 cm and 88cm and its height is 24cm. Find the curved surface area and total surface area of the frustum.

2) In figure, P is the centre of the circle of radius 6cm. seg QR is a tangent at Q. If PR = 12, find the area of the shaded region. $\left(\sqrt{3} = 1.73\right)$.

Q.5 : Attempt any ONE of the following.   3

1) The diameter and length of a roller is 120cm and 84cm respectively. To level the ground, 200 rotations, of the roller are required. Find the expenditure to level the ground at the rate of Rs. 10 per sq. m.

2) A tent of a circus is such that its lower part is cylindrical and upper part is conical. The diameter of the base of the tent is 48m and the height of the cylindrical part is 15m. Total height of the tent is 33m. Find area of canvas required to make the tent. Also find volume of air in the tent.

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