

PRERNA EDUCATION

IIT/ MEDICAL/ FOUNDATION

SAMPLE QUESTIONS

AREA RELATED TO CIRCLES

Q.No. 1 Find radius of the circle, whose circumference is 88cm.

- (a) 15cm (b) 14cm (c) 16cm (d) 13cm

Ans. (b)

Q.No. 2 If area of a circle is 154 cm^2 , the perimeter of its quadrant will be .

- (a) 58 cm (b) 60 cm (c) 17 cm (d) None of these

Ans. (a)

Q.No. 3 A circle is inscribed in a square of side 7cm, touching its side. Find area of such circle.

- (a) 49 cm^2 (b) 48.5 cm^2 (c) 38.5 cm^2 (d) None of these

Ans. (c)

Q.No. 4 Find the radius of the circle whose circumference is equal to the sum of circumferences of the two circles of diameter 30 cm and 24 cm.

- (a) $r = 30 \text{ cm}$ (b) $r = 27 \text{ cm}$ (c) $r = 24 \text{ cm}$ (d) $r = 54 \text{ cm}$

Ans. (b)

Q.No. 5 The radii of two circles are 3 cm and 4 cm. Find the radius of the circle whose area is equal to the sum of areas of two circles.

- (a) $r = 7 \text{ cm}$ (b) $r = 5 \text{ cm}$ (c) $r = 16 \text{ cm}$ (d) $r = 9 \text{ cm}$

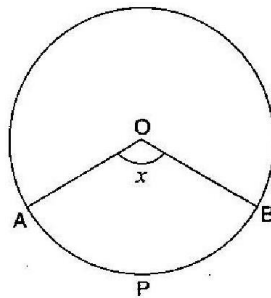
Ans. (b)

Q.No. 6 If the diameter of a semicircular protractor is 14 cm, then find its perimeter.

- (a) 14 cm (b) 30 cm (c) 35 cm (d) None of these

Ans. (d)

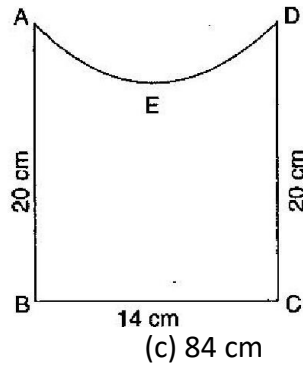
Q.No. 7 In the figure, O is the centre of the circle. The area of sector OAPB is $\frac{5}{18}$ of the area of the circle. Find x .



- (a) $x = 180^\circ$ (b) $x = 120^\circ$ (c) $x = 90^\circ$ (d) $x = 100^\circ$

Ans. (d)

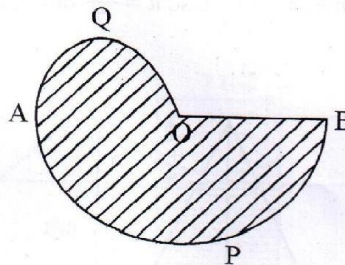
Q.No. 8 Find the perimeter of the figure, where AED is a semi-circle and ABCD is a rectangle.



- (a) 76 cm (b) 80 cm (c) 84 cm (d) None of these

Ans. (a)

Q.No. 9 In Fig. , APB and AQO are semicircles, and $AO = OB$. If the perimeter of the figure is 40 cm, find the area of the shaded region $\left[\text{use } \pi = \frac{22}{7} \right]$



- (a) $77\frac{1}{4} \text{ cm}^2$ (b) $96\frac{1}{4} \text{ cm}^2$ (c) $385\frac{1}{4} \text{ cm}^2$ (d) None of these

Ans. (b)

Q.No. 10 The long and short hands of a clock are 6 cm and 4 cm long respectively. Find the sum of the distances travelled by their tips in 24 hours (Use $\pi = 3.14$)

- (a) 950 cm (b) 954.56 cm (c) 305.56 cm (d) None

Ans. (b)

Q.No. 11 A chord AB of a circle of radius 14 cm makes a right angle at the centre (O) of the circle. Find the area of the minor segment.

- (a) 56 cm^2 (b) 76 cm^2 (c) 80 cm^2 (d) 74 cm^2

Ans. (a)

Q.No. 12 A copper wire when bent in the form of a square encloses an area of 121 cm^2 . If the same wire is bent into the form of circle, then find the area of circle

Use $\pi = \frac{22}{7}$

- (a) 156 cm^2 (b) 166 cm^2 (c) 154 cm^2 (d) None of these

Ans. (c)

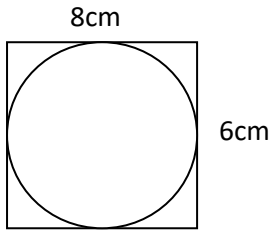
Q.No. 13 Three horses are tethered at 3 corners of a triangular plot having sides 20 m, 30 m, 40 m with ropes of 7 m length each. Find the area of the plot which can be grazed by the horses.

Use $\pi = \frac{22}{7}$

- (a) 86 cm^2 (b) 77 cm^2 (c) 87 cm^2 (d) None of these

Ans. (c)

Q.No. 14 A rectangle 8 cm x 6 cm is inscribed in a circle as shown in figure. Find the area of the shaded region. (Use $\pi = 3.14$)



- (a) 35.5 cm^2 (b) 25.5 cm^2 (c) 31.5 cm^2 (d) 30.5 cm^2

Ans. (d)

Q.No. 15 A paper is in the form of a rectangle ABCD with AB = 18 cm and BC = 14 cm. A semi-circular portion with BC as diameter is cut off. Find the area of the remaining paper.

- (a) 180 cm^2 (b) 175 cm^2 (c) 185 cm^2 (d) 252 cm^2

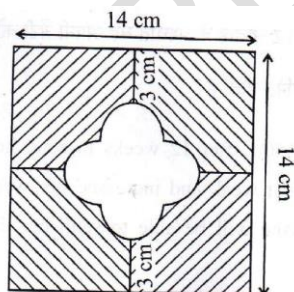
Ans. (b)

Q.No. 16 PQRS is a diameter of a circle of radius 6 cm. The lengths PQ, QR and RS are equal. Semi-circles are drawn on PQ and QS as diameters as shown in figure. Find the perimeter of the shaded region.

- (a) 12π (b) 13π (c) 15π (d) None of these

Ans. (a)

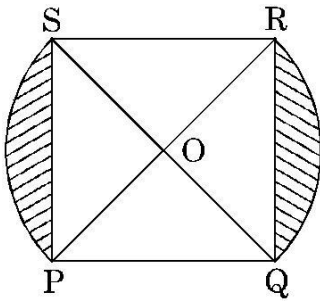
Q.No. 17 In fig, find the area of shaded region.



- (a) 164 cm^2 (b) 155 cm^2 (c) 160 cm^2 (d) 190 cm^2

Ans. (b)

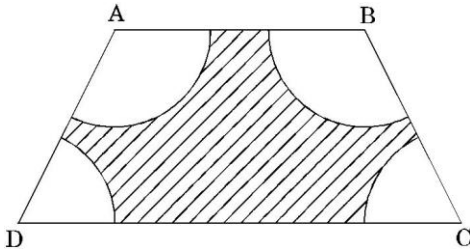
Q.No. 18 In figure, PQRS is a square lawn circular flower beds are there on the intersection of its diagonals. Find the total area of the two flower beds (shaded parts)



- (a) 404 m^2 (b) 522 m^2 (c) 252 m^2 (d) 504 m^2

Ans. (d)

Q.No. 19 In fig, ABCD is trapezium with $AB \parallel DC$, $AB = 18 \text{ cm}$, $DC = 32 \text{ cm}$ and the distance between AB and DC is 14 cm . If arcs of equal radii 7 cm have been drawn, with centers A, B, C and D, then find the area of the shaded region.



- (a) 196 cm^2 (b) 350 cm^2 (c) 154 cm^2 (d) None

Ans. (a)

Q.No. 20 The minute hand of a clock is $\sqrt{21} \text{ cm}$ long. Find the area described by the minute hand on the face of the clock between 6 a.m. and 6:05 a.m.

- (a) 5.5 cm^2 (b) 6.5 cm^2 (c) 3.5 cm^2 (d) 5 cm^2

Ans. (a)

Q.No. 21 The circumference of a circular plot is 220 m . A 15 m wide concrete track runs around outside the plot. Find the area of the track.

- (a) $\frac{28050}{17} \text{ m}^2$ (b) $\frac{1275}{7} \text{ m}^2$ (c) $\frac{1280}{17} \text{ m}^2$ (d) None of these

Ans. (d)

Q.No. 22 X and Y are centers of circles of radius 9 cm and 2 cm and $XY = 17 \text{ cm}$. Z is the centre of a circle of radius $r \text{ cm}$, which touches the above circles externally. Given that $\angle XZY = 90^\circ$, Write an equation in r and solve it for r .

- (a) $r = 6 \text{ cm}$ (b) $r = 17 \text{ cm}$ (c) $r = -17 \text{ cm}$ (d) Both (a) and (c)

Ans. (a)