CLASS-X

MATHEMATICS

AREAS RELATED TO CIRCLES

Worksheet (Module 1/2)

I.   Very Short Answer Type Questions. (1 Mark)

1. If the circumference and the area of a circle are numerically equal ,then the radius of the circle is-

    (a) 4 units   (b) π units   (c) 2 units   (d) 7 units

2. The radius of a circle is 50 cm. If the radius is decreased by 50%,its area will be decreased by-

    (a) 50%   (b) 75%   (c) 80%   (d) 25%

3 .If the sum of the areas of two circles with radii R_1 and R_2 is equal to the area of a circle of radius R, then-

(a) $R_1 + R_2 = R$ (b) $R_1^2 + R_2^2 = R^2$ (c) $R_1 + R_2 < R$ (d) $R_1^2 + R_2^2 < R^2$

4. The areas of two concentric circles forming a ring are 154 square cm and 616   square cm.The breath of the ring is ---------------

5. The circumference two circles are in the ratio 4:9. Find the ratio of their area.

II.   Short Answer Type I Questions. (2 Marks)

1.   Find the area of a right- angled triangle if the radius of its circumcircle is 2.5 cm and the altitude drawn to the hypotenuse is 2 cm long.

2.   The minute hand of a clock is 10cm long. Find the area of the face of the clock described by the minute hand between 8 a.m. and 8:25 a.m.

3.   The diameter of a circular pond is 17.5cm. It is surrounded by a path of width 3.5m. Find the area of the path.

III. Short Answer Type II Questions. (3 Marks)

1.   A steel wire when bent in the form of a square encloses an area of 121 sq. cm. If the same wire is bent into the form of a circle, find the area of the circle.

2.   The short and long hands of a 4 cm and 6 cm long respectively. Find the sum of the distances travelled by their tips in 48 hours.

3. The circumference of a circular plot is 220m. A 15m wide concrete track runs round outside the plot. Find the area of the track.

IV. Long Answer Questions. (4 Marks)

1. A semicircular region and a square region have equal perimeters. The area of the square region exceeds that of the semicircular region by 4cm². Find the perimeters and areas pf the two regions.
2. The diameters of the front and rear wheels of a tractor are 80cm and 2m respectively. Find the number of revolutions that rear wheel will make to cover the distance which the front wheel covers.