



**PARISHRAM PUBLICATIONS
PUNE**

Name of Topic : Application of Intregrals

Subject : Maths

Class : XII

Time : 1 : 00 Hr.

Marks : 25

Section – A (1 Mark Each)

(5 Marks)

- Q. 1. Area lying in the first quadrant and bounded by the circle $x^2 + y^2 = 4$ and the lines $x = 0$ to $x = 2$ is
(a) π (b) $\pi / 2$ (c) $\pi / 3$ (d) $\pi / 4$
- Q.2. Area lying between the curves $y^2 = 4x$ and $y = 2x$ is
(a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{1}{4}$ (d) $\frac{3}{4}$
- Q.3. Area bounded by the y axis, $y = \operatorname{cosec} x$ & $y = \sin x$ when $0 \leq x \leq \frac{\pi}{2}$ is
(a) $2\sqrt{2}-1$ (b) $\sqrt{2}-1$ (c) $\sqrt{2}+1$ (d) $\sqrt{2}$
- Q.4. Area bounded by the $y = x^3$, the x-axis and the ordinate $x = -2$ & $x = 1$ is
(a) -9 (b) $\frac{-15}{4}$ (c) $\frac{15}{4}$ (d) $\frac{17}{4}$
- Q.5. Area of the region bounded by the curve $y^2 = 4x$, y-axis & the line $y = 3$ is
(a) 2 (b) $\frac{9}{4}$ (c) $\frac{9}{3}$ (d) $\frac{9}{2}$

Section – B (3 Marks Each)

(12 Marks)

- Q. 6. Find the area of the region bounded by the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$
- Q. 7. Find the area of the parabola $y^2 = 4ax$ bounded by its latus rectum.
- Q. 8. Find the area under the given curve and tthe given lines $y^2 = x^2$, $x = 1$, $x = 2$ & x-axis.
- Q. 9. Find area of the region bounded by the two parabola $y^2 = x^2$ & $y^2 = x$.

OR

Find the area included between the curve $y = \cos^2 x$, $0 \leq x \leq \frac{\pi}{2}$ and the axes.

Section – C (4 Marks Each)

(8 Marks)

- Q. 10. Find area of ΔPQR whose vertices are $P(2, 1)$, $Q(3, 4)$, $R(5, 2)$.
- Q. 11. Find the area of the region bounded by on ellipse $\frac{x^2}{9} + \frac{y^2}{4} = 1$ and the line $2x + 3y = 6$

OR

Find the area of the region common to the circle $x^2 + y^2 = 9$ and the parabola $y^2 = 8x$.