DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : Maths**
Date : **DPP No. :4**

Topic :-Applications of Intergrals

1. The area bounded between the parabola $y^2 = 4x$ and the line $y = 2x - 4$ is equal to
   a) $\frac{17}{3}$ sq units b) $\frac{19}{3}$ sq units c) 9 sq units d) 15 sq units
2. The area in square units bounded by the curves $y = x^3, y = x^2$ and the ordinates $x = 1, x = 2$ is
   a) 17/12 b) 12/13 c) 2/7 d) 7/2
3. The area bounded by the curve $y = \sin^2 x$ and lines $x = \frac{\pi}{2}$, $x = \pi$ and x-axis is
   a) $\frac{\pi}{2}$ sq unit b) $\frac{\pi}{4}$ sq unit c) $\frac{\pi}{8}$ sq unit d) None of these
4. Maximum area of rectangle whose two vertices lies on the x-axis and two on the curve $y = 3 - |x|, \forall |x| < 3$, is
   a) 9 sq unit b) $\frac{9}{4}$ sq unit c) 3 sq unit d) None of these
5. The area between the curve $y = x\sin x$ and x-axis where $0 \le x \le 2\pi$, is
   a) 2π b) 3π c) 4π d) π
6. The area common to the parabola $y = 2x^2$ and $y = x^2 + 4$, is
   a) $\frac{2}{3}$ sq. units b) $\frac{3}{2}$ sq. units c) $\frac{32}{3}$ sq. units d) $\frac{3}{32}$ sq. units
7. If a curve $y = a\sqrt{x} + bx$ passes through the point (1, 2) and the area bounded by the curves, line $x = 4$ and x-axis is 8 sq unit, then
   a) $a = 3, b = -1$ b) $a = 3, b = 1$ c) $a = -3, b = 1$ d) $a = -3, b = -1$
8. If the area above the x-axis bounded by the curves $y = 2^{kx}$ and $x = 0$ and 2 is $\frac{3}{\log 2}$ then the value of k is
   a) 1/2 b) 1 c) -1 d) 2
9. The area included between the curves $y = \frac{1}{x^2 + 1}$ and x-axis is
   a) $\frac{\pi}{2}$ sq unit b) π sq unit c) 2π sq unit d) None of these
10. The area enclosed between the parabola $y = x^2 - x + 2$ and the line $y = x + 2$ in square unit equals
    a) 8/3 b) 1/3 c) 2/3 d) 4/3
11. Area of region satisfying $x \le 2, y \le |x|$ and $x \ge 0$ is
    a) 1 sq unit b) 4 sq unit c) 2 sq unit d) None of these
12. The area bounded by the curves $y = \sqrt{x}, 2y + 3 = x$ and x-axis in the first quadrant is

a) 9 b) 27/4 c) 36 d) 18

13. Area enclosed by the curve $\pi[4(x-\sqrt{2})^2+y^2]=8$ is

a) π sq units b) 2 sq units c) 3π sq units d) 4 sq units

14. The area in square units of the region bounded by the curve $x^2=4y$, the line $x=2$ and the x-axis, is

a) 1 b) 2/3 c) 4/3 d) 8/3

15. The parabola $y^2=4x$ and $x^2=4y$ divide the square region bounded by the lines $x=4$, $y=4$ and the coordinate axes. If S_1,S_2,S_3 are respectively the areas of these parts numbered from top to bottom, then S_1:S_2:S_3 is

a) 1:1:1 b) 2:1:2 c) 1:2:3 d) 1:2:1

16. The area bounded by the curve $y^2=16x$ and line $y=mx$ is $\frac{2}{3}$, then m is equal to

a) 3 b) 4 c) 1 d) 2

17. The value of c for which the area of the figure bounded by the curve $y=8x^2-x^5$, the straight lines $x=1$ and $x=c$ and the x-axis is equal to $\frac{16}{3}$ is

a) 2 b) $\sqrt{8-\sqrt{17}}$ c) 3 d) -1

18. The area bounded by $y=2-x^2$ and $x+y=0$ is

a) $\frac{7}{2}$ sq. units b) $\frac{9}{2}$ sq. units c) 9 sq. units d) None of these

19. The area bounded by the curve $x=a\cos^3 t$, $y=a\sin^3 t$, is

a) $\frac{3\pi a^2}{8}$ b) $\frac{3\pi a^2}{16}$ c) $\frac{3\pi a^2}{32}$ d) $3\pi a^2$

20. Area bounded by the parabola $x^2=4y$ and the line $x=4y-2$, is

a) 9/8 b) 9/4 c) 9/2 d) 9/7