DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : Maths**
Date : **DPP No. :3**

Topic :-Applications of Intergrals

1. The area of the smaller segment cut off from the circle $x^2 + y^2 = 9$ by $x = 1$ is
   a) $\frac{1}{2}(9\sec^{-1}3 - \sqrt{8})$ sq unit
   b) $(9\sec^{-1}(3) - \sqrt{8})$ sq unit
   c) $(\sqrt{8} - 9\sec^{-1}3)$ sq unit
   d) None of these
2. The area of the region bounded by $1 - y^2 = |x|$ and $|x| + |y| = 1$ is
   a) $1/3$ sq unit b) $2/3$ sq unit c) $4/3$ sq unit d) 1 sq unit
3. The area between the parabola $y^2 = 4ax$ and the line $y = mx$ in square units is
   a) $\frac{5a^2}{3m}$ b) $\frac{8a^2}{3m^3}$ c) $\frac{7a^2}{4m^2}$ d) $\frac{3a^2}{5m}$
4. The area bounded by the curves $y = \sin x$ between the ordinates $x = 0, x = \pi$ and the x-axis, is
   a) 2 sq. units b) 4 sq. units c) 3 sq. units d) 1 sq. units
5. The area bounded by $|x - 1| \leq 2$ and $x^2 - y^2 = 1$, is
   a) $6\sqrt{2} + \frac{1}{2}\log|3 + 2\sqrt{2}|$
   b) $6\sqrt{2} + \frac{1}{2}\log|3 - 2\sqrt{2}|$
   c) $6\sqrt{2} - \log|3 + 2\sqrt{2}|$
   d) None of these
6. The area bounded by $y = \log x$, x-axis and ordinates $x = 1, x = 2$ is
   a) $\frac{1}{2}(\log 2)^2$ b) $\log(2/e)$ c) $\log(4/e)$ d) $\log 4$
7. The area bounded by $y = x^2 + 1$ and the tangents to it drawn from the origin, is
   a) $8/3$ sq. units b) $1/3$ sq. units c) $2/3$ sq. units d) None of these
8. The area bounded by the x-axis, the curve $y = f(x)$ and the lines $x = 1$ and $x = b$ is equal to $(\sqrt{(b^2 + 1)} - \sqrt{2})$ for all $b > 1$, then $f(x)$ is
   a) $\sqrt{(x - 1)}$ b) $\sqrt{(x + 1)}$ c) $\sqrt{(x^2 + 1)}$ d) $\frac{x}{\sqrt{(1 + x^2)}}$
9. The area enclosed between the curves $y = \sin^2 x$ and $y = \cos^2 x$ in the interval $0 \leq x \leq \pi$ is
   a) 2 sq unit b) $\frac{1}{2}$ sq unit c) 1 sq unit d) None of these
10. The area bounded by $y = \sin^{-1}x, x = \frac{1}{\sqrt{2}}$ and x-axis is
    a) $\left(\frac{1}{\sqrt{2}} + 1\right)$ sq units
    b) $\left(1 - \frac{1}{\sqrt{2}}\right)$ sq uints
    c) $\frac{\pi}{4\sqrt{2}}$ sq units
    d) $\left(\frac{\pi}{4\sqrt{2}} + \frac{1}{\sqrt{2}} - 1\right)$ sq units
11. The area between the curves $x = -2y^2$ and $x = 1 - 3y^2$, is
    a) $4/3$ b) $3/4$ c) $3/2$ d) $2/3$
12. The area of the region bounded by $y = |x - 1|$ and $y = 3 - |x|$, is
    a) 2 b) 3 c) 4 d) 1
13. The area bounded by $y = [x]$ and the two ordinates $x = 1$ and $x = 1.7$ is
    a) $\frac{17}{10}$ b) 1 c) $\frac{17}{5}$ d) $\frac{7}{10}$

14. Line $x = 1$ divides A enclosed by circle $x^2 + y^2 = 16$ in two portions A_1 and $A_2(A_1 > A_2)$, then $\frac{A_1}{A_2}$ is
a) 4 b) 3 c) 2 d) None of these

15. The area enclosed by the curve $\frac{x^2}{25} + \frac{y^2}{16} = 1$ is
a) 10π sq unit b) 20π sq unit c) 5π sq unit d) 4π sq unit

16. The area of the figure bounded by the curve $|y| = 1 - x^2$ is
a) $2/3$ b) $4/3$ c) $8/3$ d) $-5/3$

17. The area enclosed within the curve $|x| + |y| = 1$ is
a) 1 sq unit b) $2\sqrt{2}$ sq units c) $\sqrt{2}$ sq units d) 2 sq units

18. The area bounded by the parabola $y^2 = 4ax$ and $x^2 = 4ay$, is
a) $\frac{8a^3}{3}$ b) $\frac{16a^2}{3}$ c) $\frac{32a^2}{3}$ d) $\frac{64a^2}{3}$

19. The area enclosed between the curves $y = ax^2$ and $x = ay^2(a > 0)$ is 1 sq unit. Then value of a is
a) $\frac{1}{\sqrt{3}}$ b) $\frac{1}{2}$ c) 1 d) $\frac{1}{3}$

20. The area bounded by the curves $y = x^3$ and $y = x$ is
a) $1/2$ sq units b) $1/4$ sq units c) $1/8$ sq units d) $1/16$ sq units