DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : Maths**
Date : **DPP No. :7**

Topic :-Applications of Intergrals

1. The area bounded by the x-axis and the curve $y = 4x - x^2 - 3$ is
   a) $4/3$ b) $3/4$ c) 7 d) $3/2$
2. The area bounded by the curves $y^2 = 4a^2(x-1)$ and lines $x = 1$ and $y = 4a$ is
   a) $4a^2$ sq units b) $\frac{16a}{3}$ sq units c) $\frac{16a^2}{3}$ sq units d) None of these
3. The area between the curves $y = xe^x$ and $y = xe^{-x}$ and line $x = 1$, in square unit, is
   a) $2\left(e + \frac{1}{e}\right)$ sq units b) 0 sq unit c) $2e$ sq units d) $\frac{2}{e}$ sq unit
4. The area (in square unit) bounded by the curves $4y = x^2$ and $2y = 6 - x^2$ is
   a) 8 b) 6 c) 4 d) 10
5. The area (in square unit)bounded by the curves $y^2 = 4x$ and $x^2 = 4y$ in the plane is
   a) $\frac{8}{3}$ b) $\frac{16}{3}$ c) $\frac{32}{3}$ d) $\frac{64}{3}$
6. The positive value of the parameter $'a'$ for which the area of the figure bounded by $y = \sin a\,x, y = 0, x = \frac{\pi}{a}$ and $x = \frac{\pi}{3a}$ is 3, is equal to
   a) 2 b) $1/2$ c) $\frac{2+\sqrt{3}}{3}$ d) $3/2$
7. Area bounded by the curves $y = x^2$ and $y = 2 - x^2$ is
   a) $8/3$ sq units b) $3/8$ sq units c) $3/2$ sq units d) None of these
8. The positive value of the parameter 'a' for which the area of the figure founded by $y = \sin ax, y = 0, x = \pi/a$ and $x = \pi/3a$ is 3, is equal to
   a) 2 b) $1/2$ c) $\frac{2+\sqrt{3}}{3}$ d) $\sqrt{3}$
9. The area between the curve $y = 2x^4 - x^2$, the x-axis and the ordinates of two minima of the curve is
   a) $\frac{7}{120}$ sq unit b) $\frac{9}{120}$ sq unit c) $\frac{11}{120}$ sq unit d) $\frac{13}{120}$ sq unit
10. If the ordinate $x = a$ divides the area bounded by x-axis part of the curve $y = 1 + \frac{8}{x^2}$ and the ordinates $x = 2, x = 4$ into two equal parts, then a is equal
    a) $\sqrt{2}$ sq unit b) $2\sqrt{2}$ sq unit c) $3\sqrt{2}$ sq unit d) None of these

11. The volume of the solid obtained by revolving about y-axis the area enclosed between the ellipse $x^2 + 9y^2 = 9$ and the straight line $x + 3y = 3$, in the first quadrant is
    a) 3π b) 4π c) 6π d) 9π
12. The area of the plane region bounded by the curve $x = y^2 - 2$ and the line $y = -x$ is (in square units)
    a) $\frac{13}{3}$ b) $\frac{2}{5}$ c) $\frac{9}{2}$ d) $\frac{5}{2}$
13. The area bounded by $y = x^2 + 2$, x-axis , $x = 1$ and $x = 2$ is
    a) $\frac{16}{3}$ sq units b) $\frac{17}{3}$ sq units c) $\frac{13}{3}$ sq units d) $\frac{20}{3}$ sq units
14. Area of the region bounded by the curves $y = 2^x, y = 2x - x^2, x = 0$ and $x = 2$ is given by
    a) $\frac{3}{\log 2} - \frac{4}{3}$ b) $\frac{3}{\log 2} + \frac{4}{3}$ c) $3\log 2 - \frac{4}{3}$ d) $3\log^2 - \frac{4}{3}$
15. The area of the quadrilateral formed by the tangents at the end points of latusrectum to ellipse $\frac{x^2}{9} + \frac{y^2}{5} = 1$, is
    a) 27/4 sq unit b) 9 sq unit c) 27/2 sq unit d) 27 sq unit
16. The area bounded by the loop of the curve $ay^2 = x^2(a - x)$ is equal to
    a) $\frac{4}{15}a^2$ sq unit b) $\frac{8}{15}a^2$ sq unit c) $\frac{16}{15}a^2$ sq unit d) None of these
17. The area of the closed figure bounded by the curves $y = \sqrt{x}, y = \sqrt{4 - 3x}$ and $y = 0$, is
    a) 4/9 b) 8/9 c) 16/9 d) 5/9
18. The area bounded by the curves $y = 3x$ and $y = x^2$ is (in square unit)
    a) 10 b) 5 c) 4.5 d) 9
19. The area of the figure bounded by the parabolas $x = -2y^2$ and $x = 1 - 3y^2$ is
    a) 8/3 b) 6/3 c) 4/3 d) 2/3
20. Area bounded by the liens $y = x$, $x = -1$, $x = 2$ and x-axis is
    a) 5/2 sq units b) 3/2 sq units c) 1/2 sq unit d) None of these