Single Correct Answer Type:

1. Area of the figure contained between the parabola $x^2 = 4y$ and the curve $y = \frac{8}{x^2+4}$ is $2\pi - K$ then K =

   (A) $\frac{2}{3}$ (B) $\frac{4}{3}$ (C) $\frac{8}{3}$ (D) $\frac{1}{3}$

2. Area of the region bounded by $y = 5x^2$ and $2x^2 - y + 9 = 0$ is ___ sq. units.

   (A) $12\sqrt{3}$ (B) $6\sqrt{3}$ (C) $9\sqrt{3}$ (D) $3\sqrt{3}$

3. The area bounded by the curve $\sqrt{x} + \sqrt{y} = 1$ and the coordinate axes is

   (A) 1 (B) $\frac{1}{2}$ (C) $\frac{1}{3}$ (D) $\frac{1}{6}$

4. The area of the region bounded by the curve y = $\frac{16 - x^2}{4}$ and y = $\sec^{-1}$ [- $\sin^2$ x] (where [.] denotes the greatest integer function) is

   (A) $\frac{1}{3}(4-\pi)^{3/2}$ (B) $8(4-\pi)^{3/2}$ (C) $\frac{8}{3}(4-\pi)^{3/2}$ (D) $\frac{8}{3}(4-\pi)^{1/2}$

5. The area of the region bounded by $\{(x,y) : x^2 - x - 1 \le y \le -1\}$ is _____ square units

   (A) 1/6 (B) 1/3 (C) 1/2 (D) 1

6. The area of the region in the xy-plane defined by the inequalities $x - 2y^2 \ge 0$, $1 - x - |y| \ge 0$ is

   (A) $\frac{1}{2}$ (B) $\frac{1}{3}$ (C) $\frac{1}{4}$ (D) $\frac{7}{12}$

7. Area bounded between the curves $y = \sqrt{4 - x^2}$ and $y^2 = 3|x|$ is/are

   (A) $\frac{\pi - 1}{\sqrt{3}}$ (B) $\frac{2\pi - 1}{3\sqrt{3}}$ (C) $\frac{2\pi - \sqrt{3}}{3}$ (D) $\frac{2\pi - \sqrt{3}}{3\sqrt{3}}$

8. If A_n is area bounded by the curve $y = (\tan x)^n$, $n > 2$ and the lines $x = 0$, $y = 0$ and $x = \frac{\pi}{4}$, then $A_{10} + A_8$ =

   (A) $\frac{1}{21}$ (B) $\frac{1}{22}$ (C) $\frac{1}{10}$ (D) $\frac{1}{9}$

9. The area bounded by the curve $\left(y - \sin^{-1} x\right)^2 = x - x^2$ is

   (A) $\frac{\pi}{4}$ (B) $\frac{\pi}{2}$ (C) π (D) $\frac{\pi}{3}$

10. The area bounded by $y = \sin^{-1} x, y = \cos^{-1} x$ and the x-axis is

    (A) 2+ $\sqrt{2}$ (B) 2- $\sqrt{2}$ (C) $\sqrt{2}$ +1 (D) $\sqrt{2}$ -1

11. The area of the region bounded by y = |x – 1|and y =1 is

    (A) 1 (B)1 (C) 1/2 (D) $\sqrt{2}$

12. Area of region bounded between two curves $x^2 + y^2 = a^2$, $|x| + |y| = a(\neq 0)$ is,

    (A) $\pi a^2 - 2a^2$ (B) $\pi a^2 + 2a^2$ (C) $2\pi a^2$ (D) πa^2

13. Area of the region bounded by y = tan x, tangent drawn to the curve at $x = \frac{\pi}{4}$ and the x-axis is

(A) $\log\sqrt{2}$ (B) $\log\sqrt{2} + \frac{1}{4}$ (C) $\log\sqrt{2} - \frac{1}{4}$ (D) $\frac{1}{4}$

14. The area bounded by the curve x+2 |y| =1 and x = 0 is

(A) $\frac{1}{3}$ (B) $\frac{1}{2}$ (C) 2 (D) 3

15. Area bounded by y=x sin x and x-axis between x = 0 and x = 2π is

(A) 0 sq.units (B) 2π sq. units (C) π sq. units (D)4π sq. units

16. The area of the region bounded by the parabola $y = x^2 + 1$ and the line x + y = 3, is given by

(A) $\frac{45}{7}$ (B) $\frac{25}{4}$ (C)11 (D) $\frac{9}{2}$

17. The area bounded by the curve $y = 2x - x^2$ and the straight line y = – x is given by

(A) $\frac{9}{2}$ (B) $\frac{43}{6}$ (C) $\frac{35}{6}$ (D) $\frac{13}{6}$

18. Let $|y| = x^2(4 - x^2)$ be a curve, then area of the loop formed by the curve for $x \geq 0$, will be

(A) $\frac{64}{15}$ (B) $\frac{256}{15}$ (C) $\frac{128}{15}$ (D) $\frac{15}{128}$

19. Area bounded by the equation [y] = [x], [.] greatest integer part when, x ,y both belongs to the interval (n, n +1) where $n \in I$, is

(A) 1 (B) 2 (C) n(n+1) (D) n

20. The area enclosed between the curve $y = \log_e(x + e)$ and the coordinate axes is

(A) 1 (B) 2 (C) e (D) e-1

Numerical Based:

21. The area of the region bounded by the curves $f(x) = x^3$ and it's inverse function is

22. The area bounded by the curves y = |x| – 1 and y = –|x|+1 is

23. Area of the region bounded by the curves $y^2 = 8x$ and $x^2 = 9y$ is

24. If the area bounded by $y \leq 3 - |3 - x|$ and $y \geq |x - 3|$ is A then $2A =$

25. The area of the domain of the function $f(x,y) = \sqrt{16 - x^2 - y^2} - \sqrt{|x| - y}$ is $k\pi$, where $\frac{k}{2}$ equals

KEY

1.	B	**2.**	A	**3.**	D	**4.**	C	**5.**	A
6.	D	**7.**	C	**8.**	D	**9.**	A	**10.**	D
11.	B	**12.**	A	**13.**	C	**14.**	B	**15.**	D
16.	D	**17.**	A	**18.**	C	**19.**	A	**20.**	A
21.	1	**22.**	2	**23.**	24	**24.**	9	**25.**	6

✤ *Wish You all the Best* ✤