CHAPTER 8

APPLICATION OF INTEGRALS

TRUE FALSE QUESTIONS

Sl.No.	Question
1	The area of the region bounded by the curve $y^2 = x$, the y-axis and between $y = 2$ and $y = 4$ is $\frac{56}{3}$ sq units. State true or false.
2	The value of , State true or false
3	The value of is 2. State true or false.
4	The area of the region bounded by the curve $y = \frac{1}{x}$ the x-axis and between $x = 1$ to $x =$ 6 is 6 State true or false.
5	The area enclosed by the curve $y = x^2$ and $y = 8$ is $\frac{56}{3}$ sq. unit. State true or false.
6	The area of the region bounded by the curve $y = \frac{1}{x}$,x-axis and between $x = 1$, $x = 4$ is 4. State true or false.
7	The area bounded by the lines $x + 2y = 2$, $y - x = 1$ and $2x + y = 7$ is 5 sq..units. State true or false.
8	. State true or false.
9	The area of the region bounded by the parabola $y= x^2$ and $y = \|x\|$ is 3 square units. State true or false.
10	The area of the region bounded by the curve $y= x^2$ and the line $y = 4$ is 32 square units.

	State true or false.
11	The area lies between the curve $y = \sin x$, $x = 0$ *and* $x = \frac{\pi}{2}$ is always above the x-axis. (TRUE/FALSE)
12.	The region bounded by the lines y=2x+1, y=3x+1 and x=4 is triangular region. (TRUE/FALSE)
13	The region bounded by two parabolas $y = x^2$ *and* $y^2 = x$ is parabola. (TRUE/FALSE)
14	It is inferred that we can consider either vertical strips or horizontal strips for calculating the area of the region. (TRUE/FALSE)
15.	The area enclosed by the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is πab *sq units.* (TRUE/FALSE)
16.	There is only one fundamental theorem of calculus. (TRUE/FALSE)
17.	Indefinite integrals can be represented as limit of a sum. (TRUE/FALSE)
18.	represent the area between curve f(x), lines x=a, x=b and x=axis. (TRUE/FALSE)
19.	If the area is negative, we take its absolute value. (TRUE/FALSE)
20.	To find the area between curves, we use second fundamental theorem of calculus. (TRUE/FALSE)
21	Area under a straight line is area of a polygon
22	Area under a curve is approximated by area of some rectangles
23	Numerical calculation of Area under a curve can be negative
24	Definite integral can be used to find area of a triangle whose sidws' equation are given
25	Area under modulus function in the interval [-2,2] is same as area of triangle ABC where A (0,0),B(-2,0),C(-2,3)
26	Area under Greatest integer function in [2,3] is not finite
27	Formula for finding area inside an ellipse can be determines by application of integral
28	Determinants can be used for finding area of a region confined by three intersecting lines
29	If f>g, then area under f is smaller than area under g
30	Area under sinx in [0,π] is less than π square unit
31	The area of the region bounded by $x^2=4y$, y=2, y=4 and the x-axis in the first quadrant is 32/2.

32	The area of the region bounded by the curve $y^2=9x$, x=2, x=4 and x-axis in the first quadrant is 16-4.
33	The area of the region bounded by the curve $y^2=x$, and the lines x=1, x=4 and x-axis is $\frac{14}{3}$.
34	The area of the region bounded by the circle $x^2+y^2=4$ is 4π sq. units.
35	The area of the region bounded by the ellipse $\frac{x^2}{25}+\frac{y^2}{16}=1$ *is* $21\ \pi$ *sq. units*.
36	The area of the region bounded by the curve $y^2=x$, and the line y=x is $\frac{1}{6}$ sq. units.
37	The area of the region bounded by the curve y= ,and x-axis is 2π sq.units.
38	The area of the region bounded by the curve y=2 +cos x , $0 \le x \le \frac{\pi}{2}$ and the ordinates x=0 and x=$\frac{\pi}{2}$ is (π +1) sq. units.
39	The area of the region bounded by the curve y=sin^2x , $0 \le x \le \frac{\pi}{2}$,and the x-axis is $\frac{\pi}{3}$ sq. units.
40	The area of the region bounded by the curve y=$\log_e x$,y=0 and x=e is 1 sq. units.
41	The area of the region bounded by the curves $y = \sin x$ between $x = 0$ *and* $x = 2p$ is 4 sq. units.
42	$\int_0^3 \lvert x-1\rvert dx = \int_0^1 \lvert x-1\rvert dx + \int_3^1 \lvert x-1\rvert dx$

43	p sq. units is the half the area enclosed by the circle $x^2 + y^2 = 2$
44	The area bounded by the curve $y = f(x)$ and $x = a \text{ and } x = b \text{ where } a < b$ is given by $\int_a^b f(x)dx$.
45	The curves $y = \|x - 1\|$ and ordinates x = 1, x = 2 represents a trapezium
46	The area bounded by the curves $y^2 = x$ and the straight line 2y = x is $\frac{4}{3}$ sq. units
47	The area of the region $\{(x, 0): y = \sqrt{4 - x^2}\}$ and X-axis is $4p$ sq. units
48	Area bounded by $\|x\| + \|y\| = 2$ is two times the area bounded by $\|x\| + \|y\| = 1$.
49	If $f(x) \geq g(x) \text{ for } x \in [a, b]$, then area bounded by curves $y = f(x)$ and $y = g(x)$ between ordinates $x = a \text{ and } y = b$ is $\int_a^b (f(x) - g(x))dx$.
50	The correct integral to find the area in the first quadrant enclosed by the x-axis, the line y = x, and the circle $x^2 + y^2 = 32$ is $\int_0^4 xdx + \int_4^{4\sqrt{2}} \sqrt{32 - x^2}\,dx$.

ANSWER KEYS (TRUE FALSE QUESTIONS)

QUESTION NUMBER	ANSWER
1	T
2	F
3	T
4	T
5	F
6	T
7	F
8	T

9	F
10	F
11	T
12	T
13	F
14	T
15	T
16	F
17	F
18	T
19	T
20	T
21	T
22	T
23	T
24	T
25	F
26	F
27	T
28	T
29	F
30	T
31	F
32	T
33	T
34	T
35	F
36	T
37	T
38	T
39	F
40	T
41	T
42	F
43	T
44	T
45	F
46	T
47	T
48	F
49	T

50	T

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