

## Mathematics ECAT Pre Engineering Chapter 19 Integration Online Test

Sr	Questions	Answers Choice
1	The solution of differential equation:	A. $dy/dx+y/x = x^2$ B. $4xy = x^4 + c$ C. $4x = x^4 = c$ D. $4y = x^4 + c$ E. $4x=4x^3 + c$
2	An equation in which at least one term contains $dy/dx$ , $d^2 y / dx^2$ etc, is called.	A. Differential equation B. Initial condition C. General solution D. Singular equation
3	The general solution of the differential equation $x dy / dx = 1 + y$ is:	A. 2 B. 1 C. 3 D. None
4	The area enclosed between the graph $y = x^2 - 4x$ and the x-axis is:	A. $20/3$ B. $41/3$ C. $32/3$ D. $25/3$
5	The area under the curve $y = 1/x^2$ between $x = 1$ and $x = 4$ is:	A. -25 B. 0.75 C. -0.35 D. -10
6	The area between the x-axis the curve $y = 4x - x^2$ is :	A. $32/2$ B. 15 C. 18 D. 21
7	The area between the x-axis and the curve $y = x^2 + 1$ from $x = 1$ to 2 is:	A. $15/6$ B. $15/4$ C. $10/4$ D. $10/3$
8	$\int x \sin^2 x dx$ is equal to:	A. $x \cot x + \ln \sin x $ B. $-x \cot x - \ln \sin x $ C. $x \cot x - \ln \sin x $ D. $x \tan x - \ln \sec x $
9	$\int x \sin x dx$ is equal to:	A. $\sin x/x + \cos x$ B. $\sin x - \cos x/x$ C. $x \cos x + \sin x$ D. $-x \cos x + \sin x$
10	$\int x \cos x dx$ is equal to :	A. $x \cos x + \sin x$ B. $\cos x + x \sin x$ C. $x \cos x + x \sin x$ D. $x \sin x + \cos x$
11	$\int \sin(ax+b) dx$ is equal to:	A. $1/2a \cos(ax+b)$ B. $-1/a \cos(ax+b)$ C. $1/a \cos(ax+b)$ D. $1/a \ln(ax+b)$
12	$\int \sec^2(ax+b) dx$ is equal to:	A. $\tan(ax+b)$ B. $1/a \tan(ax+b)$ C. $1/\tan(ax+b)$ D. $\tan(ax+b)$
13	The integral of $3x^5 dx$ is:	A. $15x^4/4$ B. $x^6/2$ C. $1/6x^5/2$ D. $x^5/5 \ln 3$
14	$\int f(x) dx$ is known as:	A. Definite integral B. Indefinite integral C. Fixed integral D. Multiple integral
15	An integral of $1/x dx$ is:	A. $1/x^2$ B. $1/-x^2$ C. $1/\ln x$

16 Which of the following integrals can be evaluated

17 Question Image

A.  $\int \pi \, d\theta$

B.  $\int \pi/6 \, d\theta$

C.  $\int \pi/2 \, d\theta$

D.  $\int \pi \, d\theta$

18 Question Image

A. 0

B. 1

C. 2

D. 4

19 Question Image

A. Always negative

B. Zero

C. Always positive

D. Infinity

20 Question Image

21 If the graph of  $f$  is entirely below the  $x$ -axis, then the value of definite integral is

A. = 0

B.  $< 0$

C.  $> 0$

D. None

22 Question Image

A. Constant function

B. Variable value

C. Function of upper limit

D. All

23 Question Image

A. Boundaries

B. Variable separable

C. Initial values

D. None

24 Question Image

A.  $Y = -x \log x - x + c$

B.  $Y = x \log x + x$

C.  $Y = x \log x - x + c$

D. None of these

25 Question Image

26 Question Image

A.  $X = 100 \sin \theta$

B.  $X = 10 \sin \theta$

C.  $X = 100 \sec \theta$

D. None of these

27 Question Image

A.  $X = 100 \sin \theta$

B.  $X = 10 \sin \theta$

C.  $X = 100 \sec \theta$

D. None of these

28 Question Image

29 Question Image

30 Question Image