ECAT Mathematics Chapter 18 Basic Concepts & Definitions Online Test

Sr	Questions	Answers Choice
1	If y = 3 x + 2cos x, then dy/dx =	A. 3-2 sin x B. 3-t sin x C. 3x² - 2sin x D. 3(1-4 sin x)
2	d/dx (cos x sin x) =	A. cos² x - sin² x B. 2cos²x + sin² x C. 2cos² x - sin² x D. 1 - sin²x
3	d/dx (cosec x)	A. -sec x tan x B. sin x cos x C. -csc x cot x D. 2sin x cos x
4	d / dx (cot x) =	A. Sec x tan x B. -csc² x C. Sec² x D. 1/cot² x
5	d/dx (cos x^2) =	A. -2x cos x B. -2x sin x² C. -2x tan x D. -2x sec² x
6	d/dx [$\tan^2$ x]	A. 2tan x sec² x B. 2tan x sec x C. 2 cot x tan x D. 2sec² x cos² x
7	Differentiation of sin x w.r.t. cot x is:	A. -sin² x sec x B. -cos x sin² x C. -cos² x tan x D. -sin² x
8	If $f(x) = 1/x-2$ then $f^1(0)$ equals:	A. -1/4 B. -3/2 C. -1/2 D. 1/5
9	If $f(x) = c$ then f^1 (x0 equals:	A. 1 B. 0 C. cx D. c
10	If $f(x) = x^{2/3}$ then $f^1(x)$ at x = 8 equals:	A. 8 B. 1/8 C. 1/3 D. 2/3
11	The derivative of $\sqrt{x}$ at x =a is:	A. 1/2a B. 2 / $\sqrt{a}$ C. 2$\sqrt{x}$ D. 1 / 2$\sqrt{x}$
12	If $f(x) = 2x^3 + 1$ then $f^1(0)$ =	A. 0 B. 1 C. 6 D. None of these
13	If x =1 -t^2 and y =3t^2 - 2t^3 then dy/dx =	A. (1-t) B. 3(1+t) C. 3(t-1) D. 3/1-t
14	If x = at^2 and y = 2at then dy/dx =	A. 2a/y B. y/2a C. -a/2y D. -2y/a

15	If $x^2 + y^2 = 1$, then dy/dx	A. y/x B. -x/y C. 1/x D. None of these
16	If 3x + 4y +7 = 0 , then dy / dx =	A. -1/2 B. -4/3 C. 7/2 D. -3/4
17	If $y = (7x + 9)^2$, then dy/dx equals:	A. 98x +126 B. 14x C. 14x +18 D. 14x+81
18	$f(x) = ax^2-3x -5$, and $f^1 (2) = 9$, a is equal to	A. 2 B. 3 C. -2 D. 4
19	If c is a constant, then d/dx (c) =	A. 0 B. c C. cx D. 1
20	If $f(x) = x^{-100}$ the value of $f^1 (1)$ is:	A. 100 B. -100 C. 0 D. -101
21	The derivative of $1/x^m$ is:	A. x^{m+1}/ m B. m(x)^{m-1} C. (m-1) x^{-m} D. m/x^{m+1}
22	If $f(x) = x^5 + x^3 + x$ the value of $f^1(1)$ is:	A. 0 B. 8 C. 5 D. 9
23	If $y=x^m$ then dy/dx equals:	A. mx B. x/m C. mx^{m-1} D. xm^{m-1}
24	$d/dx(x^3 + 2x +3)=$	A. x²+ 2 B. 3x + 2 C. 3x²+ 5 D. 3x2 + 2
25	If $y = 1/x^2$ then dy/dx equals:	A. -2x B. x⁻³ C. -2/x³ D. -2x³
26	if $y=x^2$ then dy/dx equals:	A. 2x B. x/2 C. 2x³ D. x³/2
27	If f(x) = c then $f^1(x)$ equals:	A. 1 B. 0 C. cx D. c
28	If $y = x^n$ then dy/dx equals:	A. nx B. xⁿ⁻¹ C. nxⁿ⁻¹ D. n
29	if $x \in D_f$ and $f^{1(x)}$ exists, then f is said to be	A. zero at x B. Differentiable at x C. Continuous at x D. None of these
30	Let f be real valued function continuous in the interval $(x,x_1) \subseteq D_f$ (the domain of f), then $f(x_1) - f(x)/x_1-x$ represents:	A. Instantaneous rate B. Average rate of change C. Differential coefficient D. None of these