

ECAT (Pre-Eng) Mathematics Chapter 18 Basic Concepts & Definitions

Sr	Questions	Answers Choice
1	If $y = (7x + 9)^2$, then dy/dx equals:	A. $98x + 126$ B. $14x$ C. $14x + 18$ D. $14x + 81$
2	Question Image <input type="text"/>	A. 1 B. 0 C. cx D. c
3	If $f(x) = c$ then $f^{-1}(x)$ equals:	A. 1 B. 0 C. cx D. c
4	Question Image <input type="text"/>	D. None of these
5	If $x^2 + y^2 = 1$, then dy/dx	A. y/x B. $-x/y$ C. $1/x$ D. None of these
6	Question Image <input type="text"/>	A. mx B. x/m C. mx^{m-1} D. xm^{m-1}
7	$d/dx (\operatorname{cosec} x)$	A. $-\sec x \tan x$ B. $\sin x \cos x$ C. $-\csc x \cot x$ D. $2\sin x \cos x$
8	Question Image <input type="text"/>	A. zero at x B. differentiable at x C. continuous at x D. none of these
9	Let f be real valued function continuous in the interval $(x, x_1) \subseteq D_f$ (the domain of f), then $\frac{f(x_1) - f(x)}{x_1 - x}$ represents:	A. Instantaneous rate B. Average rate of change C. Differential coefficient D. None of these
10	Question Image <input type="text"/>	
11	Question Image <input type="text"/>	
12	Question Image <input type="text"/>	
13	If c is a constant, then $d/dx (c) =$	A. 0 B. c C. cx D. 1
14	Question Image <input type="text"/>	
15	Question Image <input type="text"/>	
16	$d/dx (\cos x \sin x) =$	A. $\cos^2 x - \sin^2 x$ B. $2\cos^2 x + \sin^2 x$ C. $2\cos^2 x - \sin^2 x$ D. $1 - \sin^2 x$
17	If $x = at^2$ and $y = 2at$ then $dy/dx =$	A. $2a/y$ B. $y/2a$ C. $-a/2y$ D. $-2y/a$
18	$d/dx(x^3 + 2x + 3) =$	A. $x^2 + 2$ B. $3x + 2$ C. $3x^2 + 5$ D. $3x^2 + 2$

D. $3x^2 + 2$

19 If $y = 1/x^2$ then dy/dx equals:

- A. $-2x$
- B. x^{-3}
- C. $-2/x^3$
- D. $-2x^{-3}$

20 if $x \in Df$ and $f'(x)$ exists, then f is said to be

- A. zero at x
- B. Differentiable at x
- C. Continuous at x
- D. None of these