

NAT I Computer Science Mathematics

Sr	Questions	Answers Choice
1	If $y = \sin(ax + b)$ then fourth derivative of y with respect to x =	A. $a^4 \cos(ax + b)$ B. $a^4 \sin(ax + b)$ C. $-a^4 \sin(ax + b)$ D. $a^4 \tan(ax + b)$
2	Any point where f is neither increasing nor decreasing and $f'(x) = 0$ at that point is called a	A. Minimum B. Maximum C. Stationary point D. Constant
3	Derivative of strictly increasing function is always	A. Zero B. Positive C. Negative D. Both A and B
4	Second derivative of $y = x^9 + 10x^2 + 2x - 1$ at $x = 0$ is	A. 10 B. 20 C. 12 D. 1
5	$\frac{d}{dx} [\cos x^2] =$ _____	A. $-2x \cos x^2$ B. $-2x^2 \sin x^2$ C. $x^2 \sin x$ D. $-2x^2 \sin x^2$
6	If $y = (ax)^m + b^m$, then $\frac{dy}{dx}$ equals	A. $m(ax)^{m-1} \cdot x^{m-1}$ B. $ma^m x^{m-1}$ C. $m a^{m-1} x^{m-1}$ D. $m a^m x^{m-2}$
7	$\frac{d}{dx} (3y^4) =$	A. $12y^3 \frac{dy}{dx}$ B. $8y^3$ C. $8y^3 \frac{dy}{dx}$ D. $12y^3$
8	$\frac{d}{dx} (\sqrt{x}) =$	A. $2\sqrt{x}$ B. $1/\sqrt{x}$ C. $1/2\sqrt{x}$ D. None of these
9	$\frac{d}{dx} a^x$ is	A. xa^{x-1} B. a^{x-1} C. $x \ln a$ D. $a^x \ln a$
10	If $x^2 + y^2 = 4$, Then $\frac{dy}{dx} =$	A. $2x + 2y$ B. $4 - x^2$ C. $-x/y$ D. y/x