

NAT I Engineering Mathematics

Sr	Questions	Answers Choice
1	6 is	A. A prime integer B. An irrational number C. A rational number D. A odd integer
2	The multiplicative inverse of -1 in the set $\{-1, 1\}$ is	A. 40 B. 30 C. 50 D. 20
3	Second derivative of $y = x^9 + 10x^2 + 2x - 1$ at $x = 0$ is	A. 10 B. 20 C. 12 D. 1
4	Multiplicative inverse of "1" is	A. 4 B. 3 C. 2 D. 1
5	The set $(Q, .)$	A. Infinite set B. Singleton set C. Two points set D. None
6	The vertices of the ellipse $x^2 + 4y^2 = 16$ are	A. $(\pm 4, 0)$ B. $(0, \pm 4)$ C. $(\pm 2, 0)$ D. $(0, \pm 2)$
7	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. $a^4 \tan(ax + b)$
8	The line through the center and perpendicular to the transverse axis is called the	A. Major axis B. Minor axis C. Focal axis D. Conjugate axis
9	Domain of $\text{Cosec}\theta$ is	A. is \mathbb{R} but $\theta \neq n\pi$ B. is \mathbb{R} but $\theta \neq n\pi$ C. is \mathbb{R} but $\theta \neq 2n\pi$ D. is \mathbb{R} but $\theta \neq n\pi/2$
10	If $A = [a_{ij}]$ and $b = [b_{ij}]$ are the matrices of the order 3×3 then $A \cdot B =$	A. Circle B. Ellipse C. Parabola D. Hexagon
11	There are 30 Red, 20 Green and some Blue bells in a bag if the probability of finding a Red ball is $1/3$, how many are red balls in the bag	A. 120 B. 20 C. 40 D. 90
12	$\sqrt{23}$ is	A. A rational number B. A irrational number C. An even integer D. A factor of 36
13	The radius of the circle $(x - 1)^2 + (y + 3)^2 = 64$ is	A. 8 B. $2\sqrt{2}$ C. 4 D. 64
14	120° degrees are equal to how many radians?	A. $\pi/3$ radians B. $2\pi/3$ radians C. $\pi/4$ radians D. $\pi/2$ radians
15	In the triangle ΔABC , where C is the right angle $\tan A + \tan B =$	A. $A + B$ B. $\frac{2}{\tan A \tan B}$ C. $\frac{2}{\tan B}$ D. $\frac{2}{\tan A}$

16	The degree of the polynomial $2x^4 + 3x^2 + 16x + 28 = x^4 + 2x^2$ is	<p>A. $a - b$</p> <p>B. $a - b$</p> <p>C. $a - b$</p> <p>D. $a - b$</p>
17	Area of $\Delta ABC =$	<p>A. $ab \sin \alpha$</p> <p>B. $\frac{1}{2} ab \sin \alpha$</p> <p>C. $\frac{1}{2} ac \sin \gamma$</p> <p>D. $\frac{1}{2} ac \sin \beta$</p>
18	If a and b are any two distinct negative real numbers and $G = ab$ where A, G, H represent arithmetic, geometric and harmonic means then	<p>A. 1</p> <p>B. ω^2</p> <p>C. ω</p> <p>D. 0</p>
19	The circle $(x - 2)^2 + (y + 3)^2 = 4$ is not concentric with the circle	<p>A. $(x - 2)^2 + (y + 3)^2 = 9$</p> <p>B. $(x + 2)^2 + (y - 3)^2 = 4$</p> <p>C. $(x - 2)^2 + (y + 3)^2 = 8$</p> <p>D. $(x - 2)^2 + (y + 3)^2 = 5$</p>
20	0 (zero) is	<p>A. An irrational number</p> <p>B. A rational number</p> <p>C. A negative integer</p> <p>D. A positive number</p>