

NAT I Engineering Mathematics

Sr	Questions	Answers Choice
1	The axis of the parabola $y^2 = 4ax$ is	A. $x=0$ B. $Y=0$ C. $X=y$ D. $X=-y$
2	If $Z = (1,2)$. tjem $Z^{-1} = ?$	A. (0.2, 0.4) B. (-0.2, 0.4) C. (0.2, -0.4) D. (-0.2, -0.4)
3	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
4	If the order of A is $n \times m$. Then order of kA is	A. Forms a group B. Does not form a group C. Contains no additive identity D. Contains no additive inverse
5	$F(x) = xx$ decreases in the interval	A. (0,e) B. (0,1) C. $(-\infty,0)$ D. None
6	$\sqrt{23}$ is	A. A rational number B. A irrational number C. An even integer D. A factor of 36
7	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. Absolute
8	If α and β be irrational roots of a quadratic equation, then	A. $\alpha = b/a$ and $\beta = ca$ B. $\alpha = a/b$ and $\beta = -c/a$ C. $\alpha ² + \beta ² = 1$ D. $\alpha = -b/a$ and $\beta = c/a$
9	Which is in the solution set of $4x - 3y < 2$	A. (3,0) B. (4,1) C. (1,3) D. None
10	The equation of the circle with center origin and radius $2\sqrt{2}$ is	A. $x^2 + y^2 = 2\sqrt{2}$ B. $x^2 + y^2 + 8$ C. $x^2 + y^2 - 2\sqrt{2}$ D. $x^2 + y^2 - 8$
11	Which of the following is solution of $\tan^2 x = 1/3$	A. $7\pi/6$ B. $5\pi/6$ C. $\pi/6$ D. All
12	$\sin(2\pi - \theta) =$ _____.	A. $\cos\theta$ B. $-\sin\theta$ C. $-\sin\theta$ D. $-\cos\theta$
13	The vertices of the ellipse $x^2 + 4y^2 = 16$ are	A. $(\pm, 4, 0)$ B. $(0, \pm, 4)$ C. $(\pm, 2, 0)$ D. $(0, \pm, 2)$
14	Every prime number is also	A. Rational number B. even number C. Irrational number D. multiple of two numbers

15	The gradient of the line joining (1,4) and (-2,5) is	A. 3/8 B. -2 2/3 C. -1/3 D. 2
16	The conic is a parabola if	A. $e < 1$ B. $e > 1$ C. $e = 1$ D. $e = 0$
17	$\sec^{-1} x =$	A. $\cos^{-1} 1/x$ B. $\operatorname{cosec}^{-1} 1/x$ C. $\cos^{-1} (-x)$ D. $\tan^{-1} x$
18	$\tan^{-1} 1/x =$ _____	A. $\sin x$ B. $\sec^{-1} X$ C. $\cot^{-1} X$ D. $\sin x / \cos x$
19	A fraction in which the degree of the numerator is less than the degree of the denominator is called	A. $1 - i\sqrt{3} / 2$ B. $-1 + i\sqrt{3} / 2i$ C. $-1 + i\sqrt{3} / 2$ D. $1 + i\sqrt{3} / 2$
20	Sum of integers starting from to n is	A. $n(n+1)/4$ B. $n(n+1)/6$ C. $n(n+1)/2$ D. $n(n-1)/2$