

NAT I Engineering Mathematics

Sr	Questions	Answers Choice
1	The number of diagonals of a six sided figure are	A. 9 B. 6 C. 12 D. 3
2	6 is	A. A prime integer B. An irrational number C. A rational number D. A odd integer
3	The set of the first elements of the ordered pairs forming a relation is called its	A. -x B. does not exist C. 1/x D. 0
4	A sequence of numbers whose reciprocals forms an arithmetic sequence is called	A. Harmonic series B. Arithmetic series C. Harmonic sequence D. Geometric sequence
5	If the vector $2i+4j-2k$ and $2i +6j+xk$ are perpendicular then x-7	A. 4 B. 8 C. 14 D. 7
6	If $-1 < x < 0$, which of the following statement must be true?	A. $x < x^2$ B. $x < x^3$ C. $x^2 < x^3$ D. $x^2 < x^3$
7	If $f_1(x)$ and $f_2(x)$ are any two anti derivatives of a function $F(x)$ then the value of $f_1(x) - f_2(x)$	A. A variable B. A constant C. Undefined D. Infinity
8	If p and r are integers $P = 0$, and $p \neq -r$, which of the following must be true?	A. $p < r$ B. $p > r$ C. $p + r < 0$ D. $p - r < -0$
9	If a cone is cut by a plane perpendicular to the axis of the cone then the section is a	A. Parabola B. Circle C. Hyperbola D. Ellipse
10	In which quadrant is the solution of the equation $\sin x - 1 = 0$	A. II quadrants B. II and III quadrants C. III and IV quadrants D. I quadrant
11	$P(x) = 2x^4 - 3x^3 + 2x - 1$ is polynomial of degree	A. 1 B. 2 C. 3 D. 4
12	$\omega^{88} = ?$	A. A and B are multiplicative inverse of each other B. A and B are additive inverses of each other C. A and B are singular matrices D. A and B are equal
13	The angle α ($0^\circ < \alpha < 180^\circ$) measured counterclockwise from positive x-axis to a non-horizontal straight line / is called the	A. Rotation B. Inclination C. Radian D. None
14	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 $\theta \neq n\pi$

D. is π but $\theta \neq \pi/2$

15 $d/dx (3y^4) =$

- A. $12y^3 dy/dx$
- B. $8y^3 dy/dx$
- C. $8y^3 dy/dx$
- D. $12y^3$

16 The equation of two polynomials $P(x)/Q(x)$ where $Q(x) \neq 0$ with no common factor is called

- A. 12
- B. 1
- C. 10
- D. -10

17 The equation of the normal to the circle $x^2 + y^2 = 25$ at (4,3) is

- A. $3x - 4y = 0$
- B. $3x - 4y = 5$
- C. $4x + 3y = 5$
- D. $4x - 3y = 25$

18 If any two rows (or any two columns) of a square matrix are inter changed, the determinant of the resultant matrix is

- A. True
- B. False
- C. Fallacious
- D. Some times true

19 If $4 - x > 5$, then

- A. $x > 1$
- B. $x > -1$
- C. $x < 1$
- D. $x < -1$

20 The center of a circle of radius 10 is on the origin which of the following points lies with in the circle

- A. (10,0)
- B. (8,8)
- C. (8,4)
- D. (0,10)