

## NAT I General Science Mathematics

Sr	Questions	Answers Choice
1	What is the period of $\cot x$ ?	A. $2\pi$ B. $\pi$ C. $\pi/2$ D. $4\pi$
2	$f(x) = \ln x$ decreases in the interval	A. $(0, e)$ B. $(0, 1)$ C. $(-\infty, 0)$ D. None
3	If $k_1 : k_2 = 1:1$ then the point P dividing the line is	A. Mid point B. Extreme left point C. Extreme Right point D. Lies outside $k_1$ and $k_2$
4	If $Z = (1, 2)$ , then $Z^{-1} = ?$	A. $(0.2, 0.4)$ B. $(-0.2, 0.4)$ C. $(0.2, -0.4)$ D. $(-0.2, -0.4)$
5	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
6	The sum of the series $1+5+9+13+17+21+25+29$ is:	A. 10 cm B. 20 cm C. 30 cm D. 40 cm
7	Given X, Y are any two sets such that number of elements in X=28, number of elements in set Y=28, and number of elements in set $X \cup Y = 54$ , then number of elements in set $X \cap Y =$	A. $-7 + 2i$ B. $7 + 2i$ C. $7 - 2i$ D. $\sqrt{53}$
8	Every prime number is also	A. Rational number B. even number C. Irrational number D. multiple of two numbers
9	$\frac{d}{dx} (3y^4) =$	A. $12y^3 \frac{dy}{dx}$ B. $8y^3 \frac{dy}{dx}$ C. $8y^3 \frac{dy}{dx}$ D. $12y^3 \frac{dy}{dx}$
10	If $4 - x > 5$ , then	A. $x > 1$ B. $x > -1$ C. $x < 1$ D. $x < -1$
11	The length of rectangle is twice as much as its breadth. If the perimeter is 120 cm, the length of the rectangle is	A. Same as the original determinant B. Additive inverse of the original determinant C. Both A and B D. Adj of the original matrix
12	The set of all positive even integers is	A. $\Phi$ B. $\{1, 2, 3\}$ C. $\{\Phi\}$ D. $\{0\}$
13	The set $(Z, +)$ forms a group	A. Function on B B. Range C. Domain D. A into B
14	The sum of the interior angles for a 16 sided polygon is	A. 0 B. $\omega$ C. 1 D. $1 \cdot \omega$
15	$\frac{3}{2}$ is	A. An irrational number B. Whole number C. A positive integer

D. A rational number

16  $\cos^{-1}(-x) = \underline{\hspace{2cm}}$ .

- A.  $\pi + \cos^{-1}x$
- B.  $\pi - \sin^{-1}x$
- C.  $\pi + \sin^{-1}x$
- D.  $\pi - \cos^{-1}x$

17  $8 > t$  then

- A.  $(s-t)^2 > (t-8)^2$
- B.  $(s-t)^2 < (t-8)^2$
- C.  $(s-t)^2 = (t-8)^2$
- D. None

18  $\frac{d}{dx} [x^4] = \underline{\hspace{2cm}}$ .

- A.  $\frac{1}{4}x^4$
- B.  $x^3$
- C.  $3x^3$
- D.  $\frac{x^4}{4}$

19 The value of x, and y, when  $(x+iy)^2=5+4i$

- A.  $X=2, y=-1$
- B.  $X=-2, y=1$
- C.  $X=2, y=-i$
- D.  $X=2, y=2$

20 If  $f(x) = \sqrt{x^2 - 4}$  then which is not included in the domain of  $f(x)$

- A. 0
- B. -2
- C. 1
- D. 4