

## NAT I General Science Mathematics

Sr	Questions	Answers Choice
1	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
2	If $C_r^n, P_r^n = 24:1$ then $r = ?$	A. 1 B. 2 C. 3 D. 4
3	$d/dx a^x$ is	A. $a^{x-1}$ B. $a^x$ C. $x$ in $a$ D. $a^x$ in $a$
4	The set $(Q, .)$	A. Infinite set B. Singleton set C. Two points set D. None
5	The curves $y = x^2, y = x$ intersect at	A. $(0,0), (1,1)$ B. $(2,4)$ C. $(0,),(2,4)$ D. $(0,3),(-1,1)$
6	If $y = \sin(ax + b)$ then fourth derivative of $y$ with respect to $x =$	A. $\cos(ax + b)$ B. $\sin(ax + b)$ C. $-\sin(ax + b)$ D. $a^4 \tan(ax + b)$
7	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. $X=2, y=2$
8	The sum of the ages of Nazish and his son is 56 years. Eight years ago. Nazish was 3 times as old as his son. How old is the son now?	A. $m = n$ B. $m \neq n$ C. $mn = 1$ D. $mn = 0$
9	If a rectangle has an area $81x^2$ and length of $27x$ . then what is its width?	A. $3x$ B. $9x$ C. $3x^2$ D. $9x^2$
10	If the vector $2i+4j-2k$ and $2i+6j+xk$ are perpendicular then $x =$	A. 4 B. 8 C. 14 D. 7
11	$\int \cot(ax + b) dx =$	A. $\frac{1}{a} \log  \sin(ax + b)  + c$ B. $\frac{1}{a} \log  \cos(ax + b)  + c$ C. $\frac{1}{b} \log  \sin(ax + b)  + c$ D. $\frac{1}{a} \log  \sin(bx + a)  + c$
12	For any set $X, X \cup X$ is	A. 15 B. 15i C. -15i D. -15
13	If $A = (3,8)$ and $B = (5,6)$ then the distance between A and B is	A. $2\sqrt{2}$ B. 2 C. 1 D. 6
14	The general solution of the differential equation $dy/dx = \log x$ is	A. $Y = -x \log x - x + c$ B. $Y = x \log x + x^2 + c$ C. $Y = x \log x - x + c$ D. $Y = 2x \log x + 2x + c$
15	What is the conjugate of $-7 - 2i$ ?	A. $-7 + 2i$ B. $7 + 2i$ C. $7 - 2i$ D. $\sqrt{53}$

16	If $\alpha$ and $\beta$ 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 $\beta = c/a$
17	If $l, m, n$ are the direction cosines of a vector $\vec{OP}$ then	A. $l^2 + m^2 + n^2 = 0$ B. $l^2 + m^2 + n^2 = 1$ C. $l^2 + m^2 + n^2 = 1$ D. $l^2 + m^2 + n^2 = 0$
18	Sum of integers starting from to $n$ is	A. $n(n+1)/4$ B. $n(n+1)/6$ C. $n(n+1)/2$ D. $n(n-1)/2$
19	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
20	$\cot 360^\circ =$ _____.	A. Undefined B. 0.707 C. -0.5 D. 0