

ECAT Mathematics Chapter 10 Mathematical Inductions Online Test

Sr	Questions	Answers Choice
1	For all positive integral value of $n, 3^n < n!$, when	A. $n > 6$ B. $n < 6$ C. $n < 11$ D. $n > 11$
2	The fifteenth term of $(3-a)^{15}$ is	A. $-17a^{12}$ B. $-945a^{13}$ C. $-941a^{13}$ D. $-515a^{12}$
3	The coefficient of x^{18} in $(ax^4-bx)^9$ after expansion is	A. $84a^3 b^6$ B. $22a^3 b^6$ C. $27a^4 b^5$ D. $28a^3 b^6$
4	The fifth term of $(a+2x)^{17}$ is	A. $4013 x^3 a^{13}$ B. $2208a^{13} x^{12}$ C. $223x^7 a^{18}$ D. $38080a^{13} x^{12}$
5	The 5th term of $(3a-2b)^{-1}$ is	A. $77b^2/a^5$ B. $16b^2/243a^5$ C. $17b^4/43a^5$ D. $25b^3/43a^5$
6	The term independent of x is the expansion $(x^3+1/x)^{12}$	A. 295 B. 495 C. 395 D. 722
7	The seventh term of $(x^3+1/x)^8$ is	A. 71 B. -22 C. 27 D. 28
8	The 7th term of $(3^8 + 6^4 x)^{11/4}$ is	A. $-19217/3 x^6$ B. $189/2 6^4 x$ C. $2227/12 x^3$ D. $-19712/3 x^6$
9	The 8th term of $(1+2x)^{-1/2}$ is	A. $-221/16 x^7$ B. $-225/18 x^7$ C. $-407/9 x^3$ D. $-429/16 x^7$
10	The term involving x^4 the expansion $(3-2x)^7$ is	A. $217 x^4$ B. $15120x^4$ C. $313x^4$ D. $-25x^4$
11	The coefficient of the third term of $(8a-b)^{1/3}$, after simplification is	A. -228 B. $1/288$ C. $1/220$ D. $-1/177$
12	The coefficient of x^{10} in the expansion $(x^3+3/x^2)^{10}$ is	A. 1700 B. 17023 C. 17027 D. 17010
13	The coefficient of x^{10} in the expansion $(x^3+3/x^2)^{10}$ is	A. 1700 B. 17023 C. 17027 D. 17010
14	$(x^3-1/x)^{12}$	A. 295 B. 495 C. 395 D. 722

A. $217x^4$

15	The term involving x^4 in the expansion $(3-2x)$ is	B. $15120x^4$ C. $313x^4$ D. $-25x^4$
16	The middle term of $(x-y)^8$ is	A. $25x^4y^4$ B. $70x^4y^4$ C. $120x^4y^4$ D. $97x^4y^4$
17	The coefficient of the second term of $(a+b)^4$ is	A. 1 B. 9 C. 3 D. 5
18	$(x^3-1/2x)^6$ is	A. $15/16x^2$ B. $2/13x^2$ C. $17/7x^2$ D. $16/15x^2$
19	The middle term of $[1/x-x]^{10}$ is	A. -152 B. -252 C. 371 D. -421
20	$n^2 - 1$ divisible by 8 when n is	A. an odd integer B. an even integer C. Irrational D. Prime Number
21	$n! > 2^n - 1$ is true when	A. $n \leq 3$ B. $n \leq 6$ C. $n \geq 4$ D. $n \leq 6$
22	for $n \in \mathbb{N}$, $3^{2n} + 7$ is divisible by	A. 7 B. 8 C. 9 D. 10
23	If n is positive integers, then $2^n > 2n+1$, only when	A. $n \leq 3$ B. $n \geq 3$ C. $n \leq 2$ D. $n \leq 1$
24	For ≥ -2 , $1+3+5+\dots+(2n+5)$	A. $(n+2)^2$ B. $(n-2)^2$ C. $2n+1$ D. $(n+3)^2$
25	For $n \in \mathbb{N}$, $2^{n^2} > n$ is to only when	A. $n < 2$ B. $n \leq 4$ C. $n \geq 4$
26	If $n \in \mathbb{N}$, then $n(n+3)$ is always	A. Multiple of 3 B. Multiple of 6 C. odd D. even
27	For each even natural number n (n^2-1) is divisible by	A. 6 B. 3 C. 4 D. 8
28	If n is any positive integer, then $2+4+6+\dots+2n =$	A. $2^{n+1}-1$ B. $2^{n+1}+1$ C. $n^{n+1}+1$ D. $n(n+1)$
29	The sum of the cubes of three consecutive natural number is divisible by	A. 9 B. 6 C. 5 D. 10
30	$n(n-1)(2n-1)$, for all natural numbers n , is divisible by	A. 12 B. 6 C. 2 D. 18