ECAT Mathematics Chapter 10 Mathematical Induction

Sr	Questions	Answers Choice
1	$(1 + 2x)^4$= _____	A. 1 + 4x + 6x²+ 4x³+ x⁴ B. 1 - 4x + 6x²- 4x³+ x⁴ C. 1 - 8x + 24x²- 32x³+ 16x⁴ D. 1 + 8x+ 24x²+ 32x³+ 16x⁴
2	The third term in the expansion of (1+2x) is	A. -2x2 B. -4x2 C. 2x2 D. 4x2
3	The no of term is the expansion of (a+x)n-1 is	A. n+1 B. n-1 C. n D. n-2
4	n! > 2^n-1 is true when	A. n≤ 3 B. n≤ 6 C. n≥ 4 D. n≤ 6
5	If a statement S(n) is true for n = 1 and the truth of S(n) for n = k implies the truth of S(n) for = k + 1, then S(n) is true for all	A. Real numbers n B. Integers n C. Positive integers n D. None of these
6	Question Image	A. 8 B. 9 C. 10 D. 11
7	The proposition S(n) is true∀n∈N,S(k+1) true when _____is true	A. S(1) B. Both a & c C. S(k) D. None
8	The greatest integer which divides the number 101^{100}- 1 is	A. 100 B. 1000 C. 10000 D. 100000
9	There is no integer n for which 3^n is	A. Odd B. even C. Natural D. Prime
10	The coefficient of x^{10}in the expansion $(x^3+3/x^2)^{10}$is	A. 1700 B. 17023 C. 17027 D. 17010
11	The coefficient of x^{18} in $(ax^4-bx)^9$ after expansion is	A. 84a³ b⁶ B. 22a³b⁶ C. 27a⁴b⁵ D. 28a³b⁶
12	There are two middle terms in the expansion of (a+x)n if n is	A. Even +ve integer B. +ve integer C. Odd +ve integer D. All
13	n(n-1)(2n-1), for all natural numbers n, is divisible by	A. 12 B. 6 C. 2 D. 18
14	$(x^3-1/2x)^6$ is	A. 15/16 x² B. 2/13 x² C. 17/7 x² D. 16/15 x²

15	For every positive integers n 1+5+9+....+ (4n - 3) is	A. n(2n - 1) B. (2n - 1) C. n - 1 D. n
16	${}^{n}C_{2}$= exists when n is _____	
17	The greatest term in the expansion of $(3+2x)^{9}$, when x=1 is	A. 4th B. 4th and 5th C. 5th D. 6th
18	If n is any positive integer ,t hen 2+4+6+.....+2 n=	A. 2ⁿ-1 B. 2ⁿ+1 C. n²+1 D. n(n+1)
19	The coefficient of xn in the expansion of (1-2x)-1 is	A. (-1)n2n B. 2n C. (-1)(n+1)xr D. (n+1)2n
20	If $(1+x-2x^{3})^{6}$= $1+a_{1}x + a_{2}x^{2}+ a_{3}x^{3}+$ ..... the the value of $a_{2}+ a_{4}+ a_{6}+$ .....$+a_{12}$will be	A. 32 B. 31 C. 64 D. 1024