ECAT (Pre-Eng) Mathematics Chapter 10 Mathematical Inductions

Sr	Questions	Answers Choice
1	The term involving x^4 in the expansion (3-2x) is	A. 217x⁴ B. 15120x⁴ C. 313x⁴ D. -25x⁴
2	For each even natural number n (n^2-1) is divisible by	A. 6 B. 3 C. 4 D. 8
3	If the expansion of $(1 + x)^{20}$, then co-efficient of rth ad (r + 4)th term are equal, then r is	A. 7 B. 8 C. 9 D. 10
4	In the expansion of (x+y)n the coefficient of 5th and 12th terms are equal then n=	A. 12 B. n=14 C. 17 D. n=15
5	The expansion of $(1 + 2x)^{-2}$is valed if	A. | x | < 1/2 B. | x | < 1 C. | x | < 2 D. | x | < 3
6	The third term in the expansion of (1+2x) is	A. -2x2 B. -4x2 C. 2x2 D. 4x2
7	The term independent of x is the expansion $(x^3+1/x)^{12}$	A. 295 B. 495 C. 395 D. 722
8	There is no integer n for which 3n is	A. Even B. Prime C. Odd D. Real
9	Question Image	A. 28 / 81 B. 28 / 243 C. 81 / 28 D. 243 / 82
10	$(51)^4$is equal to	A. 7065201 B. 8065201 C. 6765201 D. 6565201
11	Number of terms in the expansion of $(a+x)^n$is	A. n - 1 B. n + 1 C. n + 2 D. n + 3
12	Question Image	A. 405 / 256 B. 504 / 259 C. 450 / 263 D. None
13	The fifteenth term of $(3-a)^{15}$ is	A. -17a¹² B. -945a¹³ C. -941a¹³ D. -515a¹²
14	The sum of the coefficient in the expansion of $(a + x)^5$is	A. 32 B. 16 C. 8 D. 5
15	The coefficient of xn in the expansion of (1-x)-1 is	A. (-1)n2n B. 1 C. (-1)n(n+1) D. (n+1)

16	The first three terms in the expansion of $(1 - x)^{-2}$ are	A. 1 - 2x + 3x² B. 1 - 2x - 3x² C. 1 + 2x + 3x² D. -2 - 2x +3x²
17	The sum of the even coefficients in the expansion $(1 + x)^n$ is	A. n² B. 2ⁿ⁻² C. 2ⁿ⁻¹ D. 2ⁿ
18	The fifth term of (a+2x3)17 is	A. 4013 x3a13 B. 2208a13 x12 C. 223x7a18 D. 38080a13 x12
19	n(n-1)(2n-1), for all natural numbers n, is divisible by	A. 12 B. 6 C. 2 D. 18
20	The first three terms in the expansion of $(1 - x)^{-3}$ are	A. 1 + 3x + 6x² B. 1 - 3x + 6x² C. -3 - 3x - 6x² D. 1 - 3x - 6x²