ECAT Mathematics Online Test

Sr	Questions	Answers Choice
1	If sin x + $\sin^2 x = 1$, then the value of $\cos^{12} x + 3\cos^{10} x + 3\cos^8 x + \cos^6 x + 2\cos^4 x + \cos^2 x - 2$ is equal to	A. 0 B. 1 C. 2 D. sin²x
2	The maximum value of $\sin\theta\cos\theta$ is	A. 1 B. 1/2 C. 1/4 D. 1/6
3	If cos 20°=K and cos $x=2k^2-1$, then the possible values of x between 0° and 360° are	A. 140° B. 50° and 140° C. 50° and 130° D. 40° and 320°
4	If $\sin\theta$ and $\cos\theta$ are the roots of the equation $ax^2 - bx + c = 0$, then a, b, c satisfy the relation	A. b²- a²= 2ac B. A²- b²= 2ac C. A²+ b²= c² D. B²+ a²= 2ac
5	Question Image	A. Less then 1 B. Equal to 1 C. Greater than 1 but less then 2 D. Greater then or equal to 2
6	If n is add the expansion $(a + x)^n$ has middle terms	A. 2 B. 3 C. 4 D. 5
7	The middle term of the expansion $(1 + 2x)^6$ is _____	A. 1st term B. 4th term C. 2nd term D. 5th term
8	The expansion $(1 + x)^{-3}$ holds when	A. |x| > 1 B. |x| < 1 C. x < 1 D. x > 1
9	1st four terms of the expansion $(1-x)^{-2}$ are	A. 1 + 2x + 3x²+ 4x³ B. 3x²+ 2x + 1 C. 1 + 3x + 4x²+ 5x³ D. None of these
10	${}^nC_2$= exists when n is _____	
11	Question Image	A. n < 8/5 B. n < 5/8 C. |n| < 8/5 D. |n|>8/5
12	Number of terms in the expansion of $(a+x)^n$ is	A. n - 1 B. n + 1 C. n + 2 D. n + 3
13	Question Image	A. Imaginary B. Rational C. Irrational D. Real numbers
14	$(0.90)^{1/2}$ is equal to	A. 0.99 B. 0.90 C. 0.80 D. 0.88
15	Question Image	

16	$(0.90)^{1/2}$is equal to	A. 0.99 B. 0.90 C. 0.80 D. 0.88
17	The term involving x^4in the expansion of $(3 - 2x)^7$is	A. 120 B. 1512 C. 1250 D. 15120
18	$(51)^4$is equal to	A. 7065201 B. 8065201 C. 6765201 D. 6565201
19	$7^{2n}+ 3^{n-1}. 2^{3n-3}$is divisible by	A. 24 B. 25 C. 9 D. 13
20	(2.02)4 s equal to	A. 16 B. 16.6496 C. 17 D. 18
21	When we expand $(a + 2b)^5$then	A. a⁵+ 10a⁴b + 40a³b²+ 80a²b³+ 80ab⁴+ 32b⁵ B. a⁵+ a⁴b + a³b²+ a²b³+ ab⁴+ b⁵ C. 5a⁵+ 4a⁴b + 3a³b²+ 2a²b³+ 1 ab⁴+ b⁵ D. None
22	For every positive integers n 1+5+9+....+ (4n - 3) is	A. n(2n - 1) B. (2n - 1) C. n - 1 D. n
23	Question Image	A. 3/8 B. 7/8 C. 1/8 D. None
24	Question Image	A. ⁿC_r B. ⁿ⁺¹C_{r+1} C. ⁿC_{r+1} D. None
25	If $(1+x-2x^3)^6= 1+a_1x + a_2x^2+ a_3x^3+$ ..... the the value of $a_2+ a_4+ a_6+$ .....+a_{12}will be	A. 32 B. 31 C. 64 D. 1024
26	The greatest integer which divides the number $101^{100}- 1$ is	A. 100 B. 1000 C. 10000 D. 100000
27	If $(1+x)^n=C_0+ C_1x +C_2x^2+$ .....+C_nx^1then $C_0C_2+ C_1C_3+ C_2C_4+$ .....+$C_{n-2}C_n$=	
28	Question Image	A. ab=-1 B. ab = 1 C. ab = 2 D. None
29	If the 4th term in the expansion of $(px + x^{-1})^m$is 2.5 for all x $\in R$, *then*	
30	The greatest term in the expansion of $(3+2x)^9$, when x=1 is	A. 4th B. 4th and 5th C. 5th D. 6th