ECAT Pre Engineering Entry Test

Sr	Questions	Answers Choice
1	The set of real roots of the equation $\log_{(5x+4)}(2x+3)^3 - \log_{(2x+3)}(10x^2+23x+12) = 1$ is	A. {-1} B. {-3/5} C. Empty set D. {-1/3}
2	Question Image	A. (a - c)²= b²- c² B. (a - c)²= b²+ c² C. (a + c)²= b²- c² D. (a + c)²= b²+ c²
3	If $x^2 + px + 1$ is a factor of $ax^3 + bx + c$, then	A. a²+ c²= -ab B. a²- c²= -ab C. a²- c²= ab D. None of these
4	Question Image	A. n if n is even B. 0 for any natural number n C. 1 if in odd D. None of these
5	The roots of the equation $2^{2x} - 10.2^x + 16 = 0$ are	A. 2, 8 B. 1, 3 C. 1, 8 D. 2, 3
6	Question Image	
7	The value of p for which both the roots of the equation 4x2- 20x + (25p2+ 15 p - 66) = 0 are less than 2, lies in	
8	If the roots of $ax^2 + bx + c = 0$ are equal in magnitude but opposite in sign, then	A. a = 0 B. b = 0 C. c = 0 D. None of these
9	Question Image	A. b = c B. a = c C. a = c D. b = 0
10	The quadratic equation $8\sec^2\theta - 6\sec\theta + 1 = 0$ has	A. Infinitely many roots B. Exactly two roots C. Exactly four roots D. No roots
11	If a > 0, b > 0, c > 0, then the roots of the equation $ax^2 + bx + c = 0$ are	A. Real and negative B. Non-real with negative real parts C. Real and positive D. Nothing can be said
12	If one root of the equation $ix^2 - 2(i+1)x + (2-i) = 0$ is 2 - i, then the other root is	A. -i B. 2 + i C. i D. 2 - i
13	If the roots of $ax^2 + b = 0$ are real and distinct then	A. ab > 0 B. a = 0 C. ab < 0 D. a > 0, b > 0
14	If $ax^2 + bx + x = 0$ is satisfied by every value of x, then	A. b = 0, c = 0 B. c = 0 C. b = 0 D. a = b = c = 0
15	Both the roots of the equation (x - b) (x - c) + (x - c)(x - a) + (x - a)(x - b) = 0 are always	A. Positive B. Negative C. Real

		D. None of these
16	Question Image	
17	Question Image	
18	The condition for polynomial equation $ax^2 + bx + c = 0$ to be quadratic is	
19	Question Image	A. 9/4 B. 4/9 C. 1 D. None of these
20	Question Image	A. 2s² B. 2s³ C. s³ D. 3s³
21	Question Image	A. K/6 B. 2K C. 3K D. 6K
22	Let A is a 3 x 3 matrix and B is its adjoint matrix. If |B| = 64, then |A| =	
23	Question Image	A. 0 B. Independent of a C. Independent of b D. Independent of c
24	Question Image	A. 0 B. abc C. 1/abc D. None of these
25	Question Image	
26	Question Image	A. Orthogonal B. Involutary C. Idempotent D. Nilpotent
27	Question Image	A. a = 4, b = 1 B. a = 1, b = -4 C. a = 0, b = 4 D. a = 2, b = 4
28	Question Image	
29	Question Image	A. Symmetric B. Skew-symmetric C. Hermitian D. Skew hermitian
30	Question Image	A. 4A - 3I B. 3A - 4I C. A - I D. None of these