

ECAT Computer Science 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. $(a - c)^2 = b^2 - c^2$ B. $(a - c)^2 = b^2 + c^2$ C. $(a + c)^2 = b^2 - c^2$ D. $(a + c)^2 = b^2 + c^2$
3	If $x^2 + px + 1$ is a factor of $ax^3 + bx + c$, then	A. $a^2 + c^2 = -ab$ B. $a^2 - c^2 = -ab$ C. $a^2 - c^2 = ab$ 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 $2^{2x} \cdot 10 \cdot 2^x + 16 = 0$ 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 $4x^2 - 20x + (25p^2 + 15p - 66) = 0$ 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. $ab \neq 0$ 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. $\frac{9}{4}$
- B. $\frac{4}{9}$
- C. 1
- D. None of these

20 Question Image

- A. $2s^{>2}</sup>$
- B. $2s^{>3}</sup>$
- C. $s^{>3}</sup>$
- D. $3s^{>3}</sup>$

21 Question Image

- A. $\frac{K}{6}$
- B. $2K$
- C. $3K$
- D. $6K$

22 Let A is a 3×3 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. $\frac{1}{abc}$
- 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