

## Mathematics ECAT Pre Engineering Chapter 6 Quadratic Equations Online Test

Sr	Questions	Answers Choice
1	The roots of $(b-c)x^2 + (c-a)x + a-b = 0$ are equal if	A. $2b = a+c$ B. $2a = b+c$ C. $2c = a+b$ D. $a + b + c = 0$
2	The roots of $ax^2 + bx + c = 0$ are	A. Rational $\Leftrightarrow b^2 - 4ac \geq 0$ B. Irrational $\Leftrightarrow b^2 - 4ac > 0$ C. Real $\Leftrightarrow b^2 - 4ac \neq 0$ D. Rational $\Leftrightarrow b^2 - 4ac = 0$
3	If $\alpha, \beta$ are the roots of $ax^2 + bx + c = 0$ , the equation whose roots are doubled is	A. $ay^2 + 2by + c = 0$ B. $ay^2 + 2by + 4c = 0$ C. $ay^2 + 2by + c = 0$ D. $ay^2 + by + 4c = 0$
4	If $w + w^2$ is a root of $(x+1)(x+2)(x+3)(x+4) = k$ , then	A. $k=0$ B. $k=1$ C. $k=w$ D. $k=w^2$
5	$(x+a)(x+b)(x+c)(x+d) = k$ , $k \neq 0$ is reducible to quadratic form only if	A. $a+b=c+d$ B. $a+c=b+d$ C. $a+d=b+c$ D. All are correct
6	The value of $x$ for which the polynomials $x^2 - 1$ and $x^2 - 2x + 1$ vanish simultaneously is	A. 2 B. 1 C. -1 D. -2
7	The expression $x^2 - x + 1$ has	A. One proper linear factor B. No proper linear factor C. Two proper linear factors D. None of these
8	The condition for $ax^2 + bx + c$ to be expressed as the product of linear polynomials is	A. $b^2 - 4ac = 0$ B. $b^2 - 4ac \geq 0$ C. $b^2 - 4ac < 0$ D. $b^2 = 4ac$
9	If the equation $x^2 + 2x - 3 = 0$ and $x^2 + 3x - k = 0$ have a common root then the non-zero value of $k$ is	A. 1 B. 3 C. 2 D. 4
10	Consider the equation $px^2 + qx + r = 0$ where $p, q, r$ are real. The roots are equal in magnitude but opposite in sign when	A. $q = 0, r = 0, p \neq 0$ B. $p = 0, qr \neq 0$ C. $r = 0, pq \neq 0$ D. $q = 0, pq \neq 0$
11	If $\alpha, \beta$ are the roots of the equation $x^2 + kx + 12 = 0$ such that $\alpha - \beta = 1$ , the value of $k$ is	A. 0 B. $\pm 1$ C. $\pm 5$ D. $\pm 7$
12	The positive value of $k$ for which the equation $x^2 + kx + 64 = 0$ has one of the roots 0	A. 4 B. 64 C. 8 D. All values of $k$
13	The sum of the roots of the equation $x^2 - 6x + 2 = 0$ is	A. -6 B. 2 C. -2 D. 6
14	The roots of $ax^2 + bx + c = 0$ are always unequal if	A. $b^2 - 4ac = 0$ B. $b^2 - 4ac \neq 0$ C. $b^2 - 4ac > 0$ D. $b^2 - 4ac \geq 0$
15	A polynomial of arbitrary degree	A. $f(x) = 0$ B. $f(x) = x$ C. $f(x) = a$ D. $f(x) = ax + b, a \neq 0$

16	$(1+w)(1+w^2)(1+w^4)(1+w^8)\dots 50$ factors	A. 0 B. -1 C. 1 D. 2
17	If $x - 1$ is a factor of $x^4 - 5x^2 + 4$ then other factor is	A. $(x + 2)^2(x - 1)$ B. $(x + 2)(x - 1)^2$ C. $(x+2)(x^2 - x - 2)$ D. $(x + 2)^2(x - 1)^2$
18	The two parts into which 57 should be divided so that their product is 782 are	A. 43,14 B. 34,23 C. 33,24 D. 44,13
19	The roots of the equation $4x^3 - 3.2x^2 + 32 = 0$ would include	A. 1 and 3 B. 1 and 4 C. 1 and 2 D. 2 and 3
20	If one root of $5x^2 + 13x + k = 0$ be the reciprocal of the other root the value of k is	A. 0 B. 2 C. 1 D. 5
21	If $\alpha, \beta$ are the roots of the equation $x^2 - 8x + p = 0$ and $\alpha^2 + \beta^2 = 40$ , then value of p is	A. 8 B. 12 C. 10 D. 14
22	The solution of equation $x^2 + 2 = 0$ in the set of real number is	A. Infinite set B. Singleton set C. Null set D. None of these
23	Question Image	