

## **ECAT Mathematics Online Test**

1 The symbolshall be used both for equation and it is true for       A - 2x 3	Sr	Questions	Answers Choice
2	1	The symbol shall be used both for equation and identity	A.
3         (x + 2)²= x² + 4x + 4 is         B. A quid ratio equation D. None           4         Question Image         A x + x B = 1 B. A = 0, B = 2 D. A = x1, B = 1 D. A = x1, B = 1 D. A = x1, B = x1           6         Which is the proper rational function         A 2 B. 3 B. A = 0, B = 2 D. A = x1, B = x1           7         2x = 3 is a conditional equation it is true for         A 2 B. 3 B. A = x1, B = x1           8         An open sentence formed by using the sign of equality "=" is called         A Equation B. In equation C. True sentence D. False Sentenc	2	$x^2$ + x - 6 = 0 is a conditional equation and it is true for	B. 2, -3 C2, -3
A A = x B = 1 B A = 0, B = 2 C A = -1, B = 1 D A = x 1, B = x 2 C A = -1, B = 1 D A = x 1, B = x 1 D A = x 1	3	$(x+2)^2 = x^2 + 4x + 4$ is	<ul><li>B. A cubic equation</li><li>C. A quadratic equation</li></ul>
See a conditional equation it is true for  2x = 3 is a conditional equation it is true for  2x = 3 is a conditional equation it is true for  3x	4	Question Image	
A 2 B. 3 C. 3/2 D. 2/3  8 An open sentence formed by using the sign of equality "=" is called B. 1 equation B. In equation C. True sentence D. False sentence  9 If a (p+q) <sup>2</sup> + bpq +c = 0 and a (p+r) <sup>2</sup> + 2 bpr +c = 0, then qr equals  A psup>2/sup>+ c/a B. psup>2/sup>+ c/a B. psup>2/sup>+ c/a C. psup>2/sup>+ c/a D. psup>2/sup>- c/a D. psup>2/sup>+ c/a D. psup>2/sup>+ c/a D. psup>2/sup>+ c/a D. psup>2/sup>- c/a D. psup>2/sup>+ c/a D. psup>2/sup>	5	Question Image	B. A = 0, B = 2 C. A = -1, B = 1
7 2x = 3 is a conditional equation it is true for C. 3/2 D. 2/3  8 An open sentence formed by using the sign of equality "=" is called B. In equation C. True sentence D. C. D. D. posup>2/sup>+ c/a B. posup>2/sup>+ c/a B. posup>2/sup>+ c/a D. posup>2/sup>- c/a D. (p - r)/sup>2/sup>- c/a D. (p	6	Which is the proper rational function	
8 An open sentence formed by using the sign of equality "=" is called C. True sentence D. False Senten	7	2x = 3 is a conditional equation it is true for	B. 3 C. 3/2
9 If a $(p+q)^2+bpq+c=0$ and a $(p+r)^2+2bpr+c=0$ , then qr equals  B. $p < sup>2 < sup>4$ C. $p < sup>2 < sup>4$ C. $p < sup>2 < sup>4 < 2$ D. $p < sup>2 < sup>4$ C. $p < sup>2 < sup>4$ C. $p < sup>2 < sup>4$ C. $p < sup>2 < sup>4 < 2$ D. $p < sup>2 < sup>4$ C. $p < sup>2 < sup>4 < 2$ D. $p < sup>2 < sup>4 < 2$ D. $p < sup>2 < sup>2 < sup>4 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2 < $	8	An open sentence formed by using the sign of equality "=" is called	<ul><li>B. In equation</li><li>C. True sentence</li></ul>
If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of the equation $px^2 + qx + r = 0$ , then  If $sin \%$ and $cos \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots of $sin \%$ and $sin \%$ are the roots	9	If a $(p + q)^2$ + bpq +c = 0 and a $(p + r)^2$ + 2 bpr + c = 0, then qr equals	B. p <sup>2</sup> + a/c C. p <sup>2</sup> + c/a
11Root of the equation $3^{x-1} + 3^{1-x} = is$ B. 1 C. 0 D112For the equation $ x^2  +  x  - 6 = 0$ , the roots areA. One and only one real number B. Real with sum one C. Real with sum zero D. Real with product zero13Question ImageA. Lies between 4 and 7 B. Lies between 5 and 9 C. Has no value between 4 and 7 D. Has no value between 4 and 7 D. Has no value between 5 and 914Question ImageA. 15 B. 9 C. 7 D. 816If the roots of $ax^2 + bx + c = 0$ (a > 0) be greater than unity, thenA. a + b + c = 0 	10	If $\sin \frac{\alpha}{\alpha}$ and $\cos \frac{\alpha}{\alpha}$ are the roots of the equation $px^2 + qx + r = 0$ , then	2pr = 0 B. (p + r) <sup>2</sup> = q <sup>2</sup> - r <sup>2</sup> C. p <sup>2</sup> + q <sup>2</sup> - 2pr = 0 D. (p - r) <sup>2</sup> =
For the equation $ x^2  +  x  - 6 = 0$ , the roots are  B. Real with sum one C. Real with sum zero D. Real with product zero  A. Lies between 4 and 7 B. Lies between 5 and 9 C. Has no value between 4 and 7 D. Has no value between 5 and 9  14 Question Image  A. 15 B. 9 C. 7 D. 8  A. $a + b + c = 0$ B. $a + b + c = 0$ B. $a + b + c = 0$ C. $a + b + c = 0$ B. $a + b + c = 0$ B. $a + b + c = 0$ C. $a + b + c = 0$ D. None of these	11	Root of the equation 3 <sup>x-1</sup> + 3 <sup>1-x</sup> = is	B. 1 C. 0
B. Lies between 5 and 9 C. Has no value between 4 and 7 D. Has no value between 5 and 9  14 Question Image  A. 15 B. 9 C. 7 D. 8  16 If the roots of ax²+ bx + c = 0 (a > 0) be greater than unity, then  B. Lies between 5 and 9 C. Has no value between 5 and 9 D. None of these	12	For the equation $ x^2  +  x  - 6 = 0$ , the roots are	B. Real with sum one C. Real with sum zero
15 Question Image  A. 15 B. 9 C. 7 D. 8  A. $a+b+c=0$ B. $a+b+c$ & $g(t)$ ; 0 C. $a+b+c$ & $g(t)$ ; 0 D. None of these	13	Question Image	B. Lies between 5 and 9 C. Has no value between 4 and 7
15 Question Image  B. 9 C. 7 D. 8  A. $a + b + c = 0$ B. $a + b + c = 0$ B. $a + b + c = 0$ B. $a + b + c = 0$ C. $a + b + c = 0$ C. $a + b + c = 0$ D. None of these	14	Question Image	
16 If the roots of $ax^2 + bx + c = 0$ (a > 0) be greater than unity, then  B. $a + b + c \cdot >$ ; 0  C. $a + b + c \cdot <$ ; 0  D. None of these	15	Question Image	B. 9 C. 7
If $\alpha$ . $\beta$ are the roots of $ax^2 + bx + c = 0$ and $\alpha + h$ , $\beta + h$ are the roots of $px^2 + qx + r = 0$ , then $h = 1$	16	If the roots of $ax^2$ + bx + c = 0 (a > 0) be greater than unity, then	B. a + b + c > 0 C. a + b + c < 0
	17	If $\alpha$ , $\beta$ are the roots of ax <sup>2</sup> + bx + c = 0 and $\alpha$ + h, $\beta$ + h are the roots of px <sup>2</sup> + qx + r=0, the	n h =

18	Question Image	
19	p, q, r and s are integers. If the A.M. of the roots of $x^2$ - $px$ + $q^2$ = 0 and G.M. of the roots of $x^2$ - $px$ + $px$ + $px$ = 0 are equal, then	A. q is an odd integer B. r is an even integer C. p is an even integer D. s is an odd integer
20	If the roots of $ax^2$ - $bx$ - $c$ = 0 change by the same quantity, then the expression in a, b, c that does not change is	
21	Let the equation $ax^2$ - $bx + c = 0$ have distinct real roots both lying in the open interval $(0, 1)$ where $a, b, c$ are given to be positive integers. Then the value of the ordered triplet $(a, b, c)$ can be	A. (5, 3, 1) B. (4, 3, 2) C. (5, 5, 1) D. (6, 4, 1)
22	Question Image	A. Two real roots B. Two positive roots C. Two negative roots D. One positive and one negative root
23	In a quadratic equation with leading co-efficient 1, a student reads the co-obtain the roots as - 15 and -4. The correct roots are	A. 6, 10 B6, -10 C. 8, 8 D8, -8
24	Question Image	A. (-1, 2) B. (-1, 1) C. (1, 2) D. {-1}
25	Question Image	A. 1 B. 2 C. 0 D. 4
26	If the roots of $x^2$ + ax + b = 0 are non-real, then for all real x, $x^2$ + ax + b is	A. Negative B. Positive C. Zero D. Nothing can be said
27	The equation $(\cos p - 1)x^2 + x(\cos p) + \sin p = 0$ in the variable x, has real roots, then p can take any value in the interval	A. (0, 2 <span style='color: rgb(34, 34, 34); font-family: "Times New Roman"; font-size: 24px; text-align: center; background-color: rgb(255, 255, 224);'><i>π</i> &gt;/span&gt;)  B. (-<span style='color: rgb(34, 34, 34); font-family: "Times New Roman"; font-size: 24px; text-align: center; background-color: rgb(255, 255, 224);'><i>π</i> &gt;/span&gt;, -0)  C. (0,<span style='color: rgb(34, 34, 34); font-family: "Times New Roman"; font-size: 24px; text-align: center; background-color: rgb(34, 34, 34); font-family: "Times New Roman"; font-size: 24px; text-align: center; background-color: rgb(255, 255, 224);'><i>π</i> &gt;/span&gt;)  D. None of these</span></span></span>
28	If $2x^{1/3} + 2x^{-1/3} = 5$ , then x is equal to	A. 1 or -1 B. 2 or 1/2 C. 8 or 1/8 D. 4 or 1/4
29	Question Image	A. Rational B. Irrational C. Non-real D. Zero
30	Question Image	A. Only one real solution B. Exactly three real solution C. Exactly one rational solution D. Non-real roots