

Mathematics ECAT Pre Engineering Online Test

Sr	Questions	Answers Choice
1	$ab > 0$ and $a > 0$ then	A. $a > b$ B. $a < b$ C. $a = b$ D. None
2	$r + 3 > 5$ then which is true	A. $r + 2 > 4$ B. $r + 2 < 4$ C. $r + 2 = 4$ D. None
3	x is a member of the set $[-1, 0, 3, 5]$ y is a member of the set $\{-2, 1, 2, 4\}$ which is possible?	A. $x - y = -6$ B. $x - y < -6$ C. $x - y > -6$ D. None
4	The total cost of 2 apples and 3 oranges is \$1.70, which of the following is true	A. The cost of one apple B. The cost of one orange C. Both have equal cost per item D. Cost of each single item can not be determined
5	Question Image	A. $p < r$ B. $p > r$ C. $p + r < 0$ D. $p - r < 0$
6	If $-1 < x < 0$, which of the following statements must be true?	A. $x < x^{sup>2</sup>}$ B. $x < x^{sup>3</sup>}$ C. $x^{sup>2</sup>} < x$ D. $x^{sup>2</sup>} < x^{sup>3</sup>}$
7	For which of the following ordered pairs (s, t) is $s + t > 2$ and $s - t < -3$?	A. (3, 2) B. (2, 3) C. (1, 8) D. (0, 3)
8	Which is in the solution set of $4x - 3y < 2$	A. (3, 0) B. (4, 1) C. (1, 3) D. None
9	A farmer possesses 100 hectometers of land and wants to grow corn and wheat. Cultivations of corn requires 3 hours per hectometer while cultivation of wheat requires 2 hours per hectometer. Working hours cannot exceed 240. If he gets a profit of Rs. 20 per hectometer for corn and Rs. 15 per hectometer for wheat. The profit function for the farmer is	A. $P(x, y) = 20x + 15y$ B. $P(x, y) = 2x + 3y$ C. $P(x, y) = x + y$ D. $P(x, y) = 3x + 2y$
10	A point of a solution region where two of its boundary lines intersect, is called	A. Boundary B. Inequality C. Half plane D. Vertex
11	Which is not a half plane	A. $ax + by < c$ B. $ax + by > c$ C. Both A and B D. None
12	If $4 - x > 5$, then	A. $x > 1$ B. $x > -1$ C. $x < 1$ D. $x < -1$
13	If $ab > 0$ and $a < 0$, which of the following is negative?	A. b B. $-b$ C. $-a$ D. $(a - b)^{sup>2</sup>}$
14	If $x < y$, $2x = A$, and $2y = B$, then	A. $A = B$ B. $A < B$ C. $A < x$ D. $B < y$

15	The equation of the sphere thro' the origin and making intercepts a, b, c on co-ordinate axes is	<p>A. $x^2 + y^2 + z^2 + ax + by + cz = 0$</p> <p>B. $x^2 + y^2 + z^2 - 2ax - 2by - 2cz = 0$</p> <p>C. $x^2 + y^2 + z^2 = a + b + c$</p> <p>D. $x^2 + y^2 + z^2 - ax - by - cz = 0$</p>
16	The center of the sphere which passes thro' (a, 0, 0), (0, b, 0), (0, 0, c) and (0, 0, 0) is	
17	The equation of the sphere passing thro' (0, 0, 0), (a, 0, 0), (0, b, 0), (9, 0, c) is	<p>A. $x^2 + y^2 + z^2 + 2ax + 2by + 2cz = 0$</p> <p>B. $x^2 + y^2 + z^2 - 2ax - 2by - 2cz = 0$</p> <p>C. $x^2 + y^2 + z^2 - ax - by - cz = 0$</p> <p>D. $x^2 + y^2 + z^2 + ax + by + cz = 0$</p>
18	Question Image	<p>A. x-axis</p> <p>B. y-axis</p> <p>C. z-axis</p> <p>D. None of these</p>
19	The intercepts of the plane $2x - 3y + 4z = 12$ on the co-ordinate axes are given by	<p>A. 2, -3, 4</p> <p>B. 6, -4, -3</p> <p>C. 6, -4, 3</p> <p>D. 3, -2, 1.5</p>
20	Question Image	
21	Question Image	
22	64. A point (x, y, z) moves parallel to xy plane. Which of the three variables x, y, z remain fixed?	<p>A. z</p> <p>B. x</p> <p>C. y</p> <p>D. x and y</p>
23	The foot of perpendicular from (α, β, γ) only y-axis is	<p>A. $(\alpha, 0, 0)$</p> <p>B. $(0, \beta, 0)$</p> <p>C. $(0, 0, \gamma)$</p> <p>D. $(0, 0, 0)$</p>
24	Question Image	<p>A. Parallel to the plane</p> <p>B. At right angles to the plane</p> <p>C. Lies in the plane</p> <p>D. Meet the plane obliquely</p>
25	Question Image	<p>A. -10</p> <p>B. 10/7</p> <p>C. -10/7</p> <p>D. -7/10</p>
26	Question Image	
27	The points (5, -4, 2), (4, -3, 1), (7, -6, 4), (8, -7, 5) are vertices of a	<p>A. Square</p> <p>B. Parallelogram</p> <p>C. Rectangle</p> <p>D. Rhombus</p>
28	The points (5, 0, 2), (2, -6, 0), (4, -9, 6) and (7, -3, 8) are vertices of a	<p>A. Square</p> <p>B. Rhombus</p> <p>C. Rectangle</p> <p>D. Parallelogram</p>
29	The equations of the line thro' the point (2, 3, -5) and equally inclined to the axis are	
30	The lines l_1 and l_2 intersect. The shortest distance between them is	<p>A. Positive</p> <p>B. Negative</p> <p>C. Zero</p> <p>D. Infinity</p>

