ECAT Pre General Science Mathematics Online Test

Sr	Questions	Answers Choice
1	The line 3x - 4y = 0	A. Is a tangent to the circle x²+ y²= 25 B. Is a normal to the circle x²+ y²=25 C. Does not meet the circle x²+ y²= 25 D. Does not pass thro' the origin
2	Question Image	A. 2 b B. 2 a C. 2 ab D. a + b
3	A circle is a limiting case of an ellipse whose eccentricity	A. Tends to a B. Tends to b C. Tends to 0 D. Tends to a + b
4	Question Image	A. An ellipse B. A parabola C. A circle D. A hyperbola
5	The latus rectum of the ellipse $5x^2+ 9y^2= 45$ is	A. 10 / 3 B. 5 / 3 C. 3 / 5 D. 3 / 10
6	The equation $ax^2+ 2hxy + by^2 +2gx + 2fy + c =0$ represents an ellipse if	
7	The slope of the normal at the point $(at^2, 2at)$ of the parabola $y^2= 4ax$ is	A. 1/t B. t C. -t D. -1/t
8	The line y = 2 x + c is a tangent to the parabola $y^2= 16 x$ if c equals	A. -2 B. -1 C. 0 D. 2
9	The equation of the parabola with directirx x = 2 and the axis y = 0 is	A. y²= 8x B. y²= -8x C. y²= 4x D. y²= -4x
10	The equation of the directrix of the parabola $x^2= 4ay$ is	A. x + a = 0 B. x - a = 0 C. y + a = 0 D. y - a = 0
11	The eccentricity of the parabola $y^2= -8x$ is	A. -2 B. 2 C. -1 D. 1
12	The length of the tangent from (2, 1) to the circle $x^2+ y^2+ 4y + 3 = 0$ is	
13	The equation of the chord of the circle $x^2+ y^2- 4x = 0$ whose mid-point is (1, 0) is	A. y = 2 B. y = 1 C. x = 2 D. x = 1
14	The line Ax + By + C = 0 will touch the circle $x^2+ y^2=\lambda$ when	A. C²=λ (A²+ B²) B. A²=<span style="font-family: "Times New Roman"; font-size: 24px; color: rgb(34, 34, 34); text-align: center; background-color: rgb(255, 255,

		224);">λ(A²+ C²) C. B²=λ(A²+ C²) D. None of these
15	Circumcentre of the triangle, whose vertices are (0, 0), (6, 0) and (0, 4) is	A. (2, 0) B. (3, 0) C. (0, 3) D. (3, 2)
16	The equation $x^2+ y^2= 0$ represents	A. A circle B. A degenerate circle C. An empty set D. A st. line
17	Question Image	
18	Question Image	A. 1 B. 5 C. 7 D. 9
19	Question Image	A. A parabola B. An ellipse C. A hyperbola D. A circle
20	A rectangular hyperbola whose centre is C is cut by any circle of radius r in four points P, Q, R and S. Then $CP^2+ CQ^2+ CR^2+ CS^2=$	A. r² B. 2 r² C. 3 r² D. 4 r²
21	Question Image	
22	The line y = 4x + c touches the hyperbola $x^2- y^2= 1$ if	
23	The eccentricity of the conic $9x^2- 16y^2= 144$ is	A. 4/5 B. 5/4 C. 4/3 D. 3/4
24	The solution set of x < 4 is	A. -∞< x < 4 B. -∞> x > 4 C. -∞< x < 2 D. -∞> x > 2
25	The graph of linear equation 2x + 3y = 10	A. Parabola B. Circle C. Hyperbola D. Straight line
26	Inequalities have _____ symbol	A. 2 B. 3 C. 4 D. 1
27	There may be _____ feasible solution in the feasible region	A. Infinite B. Finite C. Defined D. None of above
		A. Minimize

28	Optimize means _____ a quantity under certain constraints	B. Maximize C. Maximize or minimize D. None of these
29	s > t then	A. (s - t)² (t - s) ² B. (s - t)<sup>2</sup< (t - s) ² C. (s - t)²= (t - s) ² D. None
30	ab > 0 and a > 0 then	A. a > b B. a < b C. a = b D. None