ECAT Mathematics Online Test

Sr	Questions	Answers Choice
1	The equation of a line parallel to the tangent to the circle $x^2+ y^2= 16$ at the point (2, 3) and passing thro' the origin is	A. 2x + 3y = 0 B. 2x - 3y = 0 C. 3x + 2y = 0 D. 3x - 2y = 0
2	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
3	Question Image	A. 2 b B. 2 a C. 2 ab D. a + b
4	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
5	Question Image	A. An ellipse B. A parabola C. A circle D. A hyperbola
6	The latus rectum of the ellipse $5x^2+ 9y^2= 45$ is	A. 10 / 3 B. 5 / 3 C. 3 / 5 D. 3 / 10
7	The equation $ax^2+ 2hxy + by^2 +2gx + 2fy + c =0$ represents an ellipse if	
8	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
9	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
10	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
11	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
12	The eccentricity of the parabola $y^2= -8x$ is	A. -2 B. 2 C. -1 D. 1
13	The length of the tangent from (2, 1) to the circle $x^2+ y^2+ 4y + 3 = 0$ is	
14	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
		A. C²=λ (A²+ B²) B. A²=<span

15	The line Ax + By + C = 0 will touch the circle $x^2+ y^2=\lambda$ *when*	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
16	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)
17	The equation $x^2+ y^2= 0$ represents	A. A circle B. A degenerate circle C. An empty set D. A st. line
18	Question Image	
19	Question Image	A. 1 B. 5 C. 7 D. 9
20	Question Image	A. A parabola B. An ellipse C. A hyperbola D. A circle
21	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
22	Question Image	
23	The line y = 4x + c touches the hyperbola $x^2- y^2= 1$ if	
24	The eccentricity of the conic $9x^2- 16y^2= 144$ is	A. 4/5 B. 5/4 C. 4/3 D. 3/4
25	The solution set of x < 4 is	A. -∞< x < 4 B. -∞> x > 4 C. -∞< x < 2 D. -∞> x > 2
26	The graph of linear equation 2x + 3y = 10	A. Parabola B. Circle C. Hyperbola D. Straight line
27	Inequalities have _____ symbol	A. 2 B. 3 C. 4 D. 1
		A. Infinite B. Finite

28	There may be _____ feasible solution in the feasible region	B. Finite C. Defined D. None of above
29	Optimize means _____ a quantity under certain constraints	A. Minimize B. Maximize C. Maximize or minimize D. None of these
30	s > t then	A. (s - t)²> (t - s)² B. (s - t)²< (t - s)² C. (s - t)²= (t - s)² D. None