ECAT Mathematics Online Test

Sr	Questions	Answers Choice
1	Which of the vectors have opposite direction?	
2	Question Image	
3	The magnitude of a vector can never be	A. Zero B. Negative C. Positive D. None of these
4	A vector of magnitude zero is called	A. Position vector B. Null vector C. Free vector D. None of these
5	Unit vector in the positive direction of x-axis is	
6	Question Image	A. Free vector B. Null vector C. Unit vector D. None of these
7	The locus of the point of intersection of tangents to an ellipse at two points, sum of whose eccentric angles is constant is	A. A parabola B. A circle C. An ellipse D. A st. line
8	The number of real tangents that can be drawn to the ellipse $3x^2+ 5y^2= 32$ passing thro. (3, 5) is	A. 0 B. 1 C. 2 D. Infinite
9	The two different parts of the hyperbola are called its	A. Vertices B. Directrices C. Nappes D. Branches
10	The line through the centre and perpendicular to the transverse axis is called the	A. Major axis B. Minor axis C. Focal axis D. Conjugate axis
11	The vertices of the ellipse $x^2+ 4y^2= 16$ are	
12	The end points of the major axis of the ellipse are called its	A. Foci B. Vertices C. Co - vertices D. None of these
13	The axis of the parabola $y^2= 4ax$ is	A. X = 0 B. Y = 0 C. X = y D. X = -y
14	The conic is a parabola if	A. e < 1 B. e > 1 C. e = 1 D. None of these
15	The perpendicular bisector of any chord of a circle	A. Passes through the centre of the circle B. Does not pass through the centre of the circle C. May or may not pass through the centre of the circle D. None of these
16	A line segment whose end points lie on a circle is called	A. The secant of the circle B. The arc of the circle C. The chord of the circle D. The circumference of the circle
17	The equation of the normal to the circle $x^2+ y^2= 25$ at (4, 3) is	A. 3x - 4y =0 B. 3x - 4y =5 C. 4x + 3y = 5

		D. 4x + 3y = 25
18	The point (x_1, y_1) lies outside the circle $x^2+ y^2+ 2gx + 2fy + c =0$ if	
19	The circle $(x - 2)^2+ (y + 3)^2= 4$ is not concentric with the circle	A. (x - 2)²+ (y + 3)²= 9 B. (x + 2)²+ (y - 3)²= 4 C. (x + 2)²+ (y - 3)²= 8 D. (x - 2)²+ (y + 3)²= 5
20	If x + y + 1 = 0 touches the parabola $y^2=\lambda x$, then λ is equal to	A. 2 B. 4 C. 6 D. 8
21	The parabola $y^2= x$ is symmetric about	A. x-axis B. y-axis C. Both x and y-axis D. The line y = x
22	If (a, b) is the mid-point of a chord passing thro' the vertex of the parabola $y^2= 4x$, then	A. a = 2b B. 2a = b C. a²= 2b D. 2a = b²
23	If t is the parameter for one end of a focal chord of the parabola $y^2= 4ax$, then its length is	
24	The point on $y^2 = 4ax$ nearest to the focus has its abciassae equal to	A. -a B. a C. a/2 D. 0
25	The radius of the circle $(x - 1)^2+ (y + 3)^2= 61$ is	A. 8 B. 4 C. 64 D. None of these
26	Question Image	
27	The constant distance of all points of the circle from its centre is called the	A. Radius of the circle B. Secant of the circle C. Chord of the circle D. Diameter of the circle
28	If a cone is cut by a plane perpendicular to the axis of the cone, then the section is a	A. Parabola B. Circle C. Hyperbola D. Ellipse
29	If the st. line 3x + 4y = K touches the circle $x^2+ y^2- 10x = 0$ then the value of K is	A. -1 or 20 B. -10 or 40 C. -2 or 20 D. 2 or 20
30	A square is inscribed in the circle $x^2+ y^2- 2x + 4y + 3 =0$. Its sides are parallel to the co-ordinate axes. Then one vertex of the square is	