

## ECAT Pre General Science Mathematics Chapter 23 Conic Section Online Test

Sr	Questions	Answers Choice
1	Number of conics is	A. 1 B. 3 C. 2 D. 4
2	The vertex of the parabola $(x \sin a - y \cos a)^2 = 4a(x \cos a + y \sin a)$ lies at	A. $(a \cos a, a \sin a)$ B. $(a, 0)$ C. $(\cos a, \sin a)$ D. $(0, 0)$
3	The number of standard parabolic functions are is	A. 4 B. 2 C. 3 D. 1
4	The parabola $y^2 = 4ax$ open up if	A. $a < 0$ B. $a \neq 0$ C. $a > 0$ D. All are incorrect
5	$y = -a$ is the equation of the directrix of	A. $y^2 = 4ax$ B. $x^2 = -4ay$ C. $x^2 = 4ay$ D. $y^2 = -4ax$
6	Equation of normal to the circle $x^2 + y^2 = 25$ at $(5 \cos \theta, 5 \sin \theta)$	A. $x \cos \theta + y \sin \theta = 5$ B. $x \cos \theta - y \sin \theta = 0$ C. $x \sin \theta - y \cos \theta = 0$ D. None of these
7	For what value of $k$ , $3x - 2y + k = 0$ is tangent to the circle $x^2 + y^2 + 6x - 4y = 0$	A. $k = 0$ B. $k = 0$ or $26$ C. $k = 26$ D. $k = -13$
8	Two circles $x^2 + y^2 + 8x - 9 = 0$ and $x^2 + y^2 + 6y + k = 0$ touch internally if the value of $k$ is	A. $k = 9$ B. $k = \pm 9$ C. $k = -9$ D. $k = 11$
9	The line joining the center of a circle to the midpoint of the chord is	A. Perpendicular to the tangent B. Perpendicular to the normal C. Perpendicular to the chord D. Perpendicular to the chord
10	Equation of the chord of contact to the tangents drawn from $(-3, 4)$ to the circle $x^2 + y^2 = 21$	A. $-3x + 4y = 21$ B. $4x - 3y = 0$ C. $-3x + 4y = 25$ D. None of these
11	Area of the circle with ends of a diameter at $(-3, 2)$ and $(5, -6)$	A. $128\pi$ sq. units B. $64\pi$ sq. units C. $32\pi$ sq. units D. None of these
12	Two tangents drawn from $(2, 3)$ to the circle $x^2 + y^2 = 9$ are	A. Real and distinct B. Imaginary C. Real and coincident D. None of these
13	The centre of the circle $x^2 + y^2 - 2fx - 2gy + x = 0$ is	A. $(-g, -f)$ B. $(g, f)$ C. $(f, g)$ D. $(-f, -g)$
14	$x = r \cos \theta, y = r \sin \theta$ are the parametric equations of	A. Circle B. Ellipse C. Parabola D. Hyperbola
15	The common point to four standard parabolas	A. Focus B. Centre C. Vertex D. $P(x, y)$

16	Equation of parabola with focus $F(-3, 1)$ directrix $x=3$ is	A. $(y-1)^2 = -12x$ B. $(y-1)^2 = 4x$ C. $(x+3)^2 = 4a(y-1)$ D. $y^2 = -12(x-1)$
17	The span of a standard parabola depends upon	A. $x$ B. $a$ C. $y$ D. $y^2$
18	If $a > 0$ the parabola $y^2 = -4ax$ lies in	A. I and IV quadrant B. I quadrant C. II and III quadrant D. All are incorrect
19	The conic $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ never represents a circle if	A. $a \neq b, h \neq 0$ B. $a = b$ C. $h \neq 0$ D. $h = 0$
20	The equation of the tangent at vertex to the parabola is $y^2 = -8(x-3)$	A. $y=0$ B. $x=3$ C. $x=1$ D. $x=5$
21	The straight line passing through the focus and perpendicular to the directrix of the conic is known as its	A. Tangent B. axis C. Focal chord D. major or minor axis
22	The equation of vertical asymptotes of $y = \cos ec x$ is	A. $x = 0$ B. $y = 0$ C. $x = \infty$ D. $y = \infty$
23	The locus of the centre of a circle which touches two given circles externally is:	A. a hyperbola B. an ellipse C. a circle D. a parabola
24	An ellipse slides between two lines at right angles to one another. The locus of its centre is :	A. a parabola B. an ellipse C. a circle D. a hyperbola
25	The eccentricity of ellipse becomes zero, then it takes the form of:	A. a parabola B. a straight line C. a circle D. None of these
26	The locus of intersection of perpendicular tangents to the parabola $y^2 = 4ax$ is:	A. Axis of the parabola B. Focal chord of the parabola C. The tangent at vertex of the parabola D. a directrix of the parabola
27	The eccentricity of parabola is:	A. 1 B. 0 C. Greater than 1 D. Less than 1
28	Co-ordinate of a point on the parabola $y^2 = 8x$ whose focal distance is 4 are:	A. (2, 4) B. (-2, -4) C. (-2, 4) D. (2, -4)
29	Coordinates of the focus of the parabola $x^2 - 4x - 8y - 4 = 0$ are:	A. (0, 2) B. (0, 1) C. (2, 0) D. (1, 2)
30	Which shape of the following objects are approximately parabolic arcs?	A. Light reflectors B. Force C. Weight of the pendulum D. None of these