ECAT Computer Science Entry Test

Sr	Questions	Answers Choice
1	The square root of 2i - 20i is	A. ±(5 - 2i) B. ±(5+ 2i) C. (5 - 2i) D. None of these
2	The value of i^{4n+1}	A. 1 B. -1 C. i D. i²
3	What is the conjugate of -7 -2i ?	A. -7 + 2i B. 7 +2i C. 7 -2i D. √53
4	The equation |x +4| = x has solution	A. x = -2 B. x = 2 C. x = -4 D. x = 4
5	If z_1 =√-36 ,z_2 =√-25,z3 =√-16 then	A. 15 B. 15i C. -15i D. -15
6	if Z1 = 1+i, Z2= 2+3i, then |Z2 -Z1| =	A. √3 i B. √7 C. -2-i D. √5
7	If Z = (1,2), then Z^{-1} =?	A. (0.2, 0.4) B. (-0.2 ,0.4) C. (0.2,-0.4) D. (-0.2,-0.4)
8	The value of x and y when (x + iy)2 = 5 - 4i	A. x = 2, y = -1 B. x = -2, y = 1 C. x = 2, y = -i D. x = 2, y = 2
9	Every prime number is also	A. Rational number B. Even number C. Irrational number D. Multiple of two numbers
10	√23 is	A. A rational number B. A irrational number C. An even integer D. A factor of 36
11	6 is	A. A prime integar B. An irrational number C. A rational number D. An odd integer
12	0 (zero) is	A. An irrational number B. A rational number C. A negative integer D. A positive number
13	The second degree equation of the form Ax2 +By2 +Gx +Fy +C =0 represent hyperbola if	A. A = B≠ 0 B. A≠ B and both are of same sign C. A≠ B both are of opposite sign D. Either A = 0 or B =0
14	If the distance of any point on the curve from any of the two lines approaches zero then it is called	A. Axis B. Directrices C. Asymptotes D. None
15	The ellipse and hyperbola are called	A. Concentric conics B. Central conics C. Both a b D. None

16	The directrix of y2 =-4ax is	A. y =-a B. y = a C. x = a D. x = -a
17	A line joining two distinct points on a parabola is called	A. Axis B. Directrix C. Chord D. Tangent
18	For the parabola the line through focus and perpendicular to the directrix is called	A. Tangent B. Vertex C. Axis D. None
19	The eccentricity e of an ellipse is always	A. Rational B. Real C. Irrational D. Integer
20	The line y= 4x +c touches the hyperbola x2- y2 =1 if and only if	A. c =±√2 B. c =0 C. c=±√17 D. c=±√15
21	If e,e′ be the eccentricities of two conics S=0 and S′ =0 and if e2 +e′2 =3 then both S and S′ can be	A. Hyperbola B. Parabolas C. Ellipses D. None of these
22	The line 2x +√6y =2 is a tangent to the curve x2 -2y2 =4 The point of contact is	A. (√6,1) B. (2,3) C. (7,-2√6) D. (4,-√6)
23	If eccentricity of ellipse becomes zero then it takes the form of	A. A parabola B. A circle C. A straight line D. None of these
24	The sum of the focal distance from any point on the ellipse 9x2 +16y2 =144 is	A. 32 B. 16 C. 18 D. 8
25	The centre of the conic x2 +16x +4y2 -16y +76 =0 is	A. (0,10) B. (-8,4) C. (-8,-2) D. (1,1)
26	Intersection of two parabolas	A. parabola B. Two points C. Four points D. Hyperobla
27	If either A = 0 or B =0,then Ax2 +By2 +2Gx +2Fy +c =0 represents a	A. Circle B. Hyperbola C. Ellipse D. Parabola
28	ax2 +2hxy +by2 +2gx +2fy +c =0 may represent an ellipse if	A. h2 -ab <0 B. h2 -ab≠ 0 C. h2 -ab =0 D. h2 -ab >0
29	The remove the term involving xy, from 7x2 -6√3xy+ 13y2 -16 =0 the angel of rotation is	A. θ = 30° B. θ = 45° C. θ = 60° D. θ = 75°
30	The second degree equation 2x2 -xy+ 5x -2y +2 =0 represents	A. Circle B. Hyperbola C. Ellipse D. Pair of straight lines