ECAT Pre Engineering Entry Test

Sr	Questions	Answers Choice
1	(x +a)(x +b)(x +c)(x +) = k, k≠0 is reducible to quadratic form only if	A. a+b=c+d B. a+c=b+d C. a+d=b+c D. All are correct
2	The value of x for which the polynomials x2 - 1 and x2 -2x + 1 vanish simultaneously is	A. 2 B. 1 C. -1 D. -2
3	The expression x2 - x + 1 has	A. One proper linear factor B. No proper linear factor C. Two proper linear factors D. None of these
4	The condition for ax2 + bx c to be expressed as the product of linear polynomials is	A. b4 - 4ac =0 B. b4- 4ac ≥0 C. b4- 4ac <0 D. b4= 4ac
5	If the equation x2+2x-3=0 and x2+3x-k=0 have a common root then the non - zero value of k is	A. 1 B. 3 C. 2 D. 4
6	Consider the equation px2 + qx + r = 0 where p,q,r are real The roots are equal in magnitude but opposite in sign when	A. q = 0, r = 0,p ≠ 0 B. p = 0,qr≠ 0 C. r = 0,pq≠ 0 D. q = 0, pq≠ 0
7	If a,β are the roots of the equation x2 + kx +12 = 0 such that a - β = 1, the value of k is	A. 0 B. ±1 C. ±5 D. ±7
8	The positive value of k for which the equation x2 + kx + 64 = 0 has one of the roots 0	A. 4 B. 64 C. 8 D. All values of k
9	The sum of the roots of the equation x2 -6x +2 = 0 is	A. -6 B. 2 C. -2 D. 6
10	The roots of ax2 + bx + c = 0 are always unequal if	A. b2 - 4ac = 0 B. b2- 4ac ≠ 0 C. b2- 4ac > 0 D. b2- 4ac ≥ 0
11	A polynomial of arbitrary degree	A. f(x) = o B. f(x) = x C. f(x) = a D. f(x) = ax + b,a ≠ 0
12	(1+w)(1+w2)(1+w4)(1+w8)....50 factors	A. 0 B. -1 C. 1 D. 2
13	If x - 1 is a factor of x4 - 5x2 + 4 then other factor is	A. (x + 2)2(x - 1) B. (x + 2)(x - 1)2 C. (x+2)(x2- x- 2) D. (x + 2)2(x - 1)2
14	The two parts into which 57 should be divided so that their product is 782 are	A. 43,14 B. 34,23 C. 33,24 D. 44,13
15	The roots of the equation 4x - 3.2x+2 + 32 = 0 would include	A. 1 and 3 B. 1 and 4 C. 1 and 2 D. 2 and 3

16	If one root of 5x2 + 13x + k = 0 be the reciprocal of the other root the value of k is	A. 0 B. 2 C. 1 D. 5
17	If a,βare the roots of the equation x2 - 8x + p = 0 and a2 + β2= 40,then value of p is	A. 8 B. 12 C. 10 D. 14
18	A diagonal matrix is always	A. Identity B. Triangular C. Scalar D. Non-singular
19	The matrix A = [aij]mxn with m ≠n is always	A. Symmetric B. Hermition C. Skew-symmetric D. None
20	The matrix A = [aij]1xn is a	A. Vector B. Rectangular matrix C. Column vector D. Square matrix
21	The matrix A = [aij]mxn with m≠n is	A. Rectangular B. Symmetric C. Square D. None
22	If the matrices A and B have the order 1 x 10 and 10 x 1 then order of AB is	A. 1 x 1 B. 1 x 10 C. 10 x 10 D. 10 x 1
23	If A and B are skew-symmetric then (AB)t is	A. At Bt B. AB C. -AB D. BA
24	Every identity matrix is	A. Row-vector B. Scalar C. Column-vector D. All
25	A non-homogeneous linear system AX = B has no solution if	A. |A| = 0 B. |A|≠ 0 C. Rank (a) = no of variables D. Rank > no of variables
26	If A is a non-singular matrix then adj A is	A. Non-singular B. Symmetric C. Singular D. Non defined
27	Matrix multiplication is	A. Commutative B. Not commutative C. Not associative D. Not distributive
28	If A = [aij]mxpand B =[aij]pxnthen order of BA is	A. m x n B. p x n C. n x m D. None of these
29	A = [3] is a/an	A. Square matrix B. Scalar matrix C. Diagonal matrix D. Identity matrix
30	Question Image	D. all are correct