Mathematics ECAT Pre Engineering Chapter 5 Matrices and Determinants Online Test

Sr	Questions	Answers Choice
1	The order of the matrix A is 3 x 5 and that of B is 2 x 3.The order of the matrix BA is	A. 2 x 3 B. 3 x 2 C. 2 x 5 D. 5 x 2
2	Which of the following is skew symmetric matrix	
3	The square matrix A is skew-symmetric when At =	A. -B B. -C C. -A D. -D
4	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
5	The transport of a null matrix is	A. Row matrix B. Column matrix C. Square matrix D. Null matrix
6	Question Image	A. Square matrix B. Row matrix C. Symmetric matrix D. Null matrix
7	Question Image	D. all are correct
8	A matrix in which the number of rows is not equal to the number of columns is called a	A. Diagonal matrix B. Rectangular matrix C. Square matrix D. Scalar matrix
9	Trival solution of homogeneous linear equation is	A. (0, 0, 0) B. (1, 2, 3) C. (1, 3, 5) D. a.b and c
10	Question Image	A. x =0, y =4 B. x = -1, y = 2 C. x = 2, y = 3 D. x = 3, y = 4
11	The matrix A is Hermitian when (A)' =	A. A B. -A C. A D. A'
12	We also the system of non-homogeneous linear equations by	A. a and b B. b and c C. c and a D. a, b and c
13	Question Image	A. I B. |A| C. |A| I D. None of these
14	We solve the system of non-homogeneous linear equations by	A. a and b B. b and c C. c and a D. a,b and c
15	A square matrix A = [aij] is upper triangular when	A. cij = 0 B. bij = 0 C. aij = 0 for all i > j D. dij = 0
16	Question Image	
17	Two matrices A and B are conformable for the product AB if	A. Both A and B are square B. Both A and B are symmetric C. Number of rows of A = number of columns of

17	Two matrices A and B are conformable for the product AB if	B D. Number of columns of A = number of rows of B
18	Question Image	
19	Question Image	A. Hermitian matrix B. Skew-hermitian matrix C. Symmetric matrix D. Identity matrix
20	Question Image	A. (2x+a+b+c) B. (a+b+c) C. (a+b+c+x) D. 0
21	Question Image	A. 1, 2, 3 B. 1, 5, 9 C. 2, 5, 8 D. 3, 6, 9
22	Matrix multiplication is	A. Commutative B. Not commutative C. Not associative D. Not distributive
23	Question Image	A. Diagonal matrix B. Scalar matrix C. Triangular matrix D. Identity matrix
24	If A and B are two matrices such that AB = B and BA =A, then $A^2 + B^2 =$	A. 2 AB B. 2 BA C. A + B D. AB
25	In order of A is m x n and order of B is n x p then order of AB is	A. m x m B. n x n C. m x p D. p x m
26	Question Image	A. Zero matrix B. Diagonal matrix C. Column matrix D. Scalar matrix
27	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
28	Question Image	A. 9/4 B. 4/9 C. 1 D. None of these
29	For any positive integer n	A. ABn = Bn A ⇔ AB = BA B. ABn = Bn A⇔ A,B are square matrices and AB = BA C. ABn = BnA⇔ A + B D. ABn = BnA ⇔ A and B are square matries
30	Question Image	A. Symmetric B. Skew-symmetric C. Hermitian D. Skew hermitian
31	Question Image	A. 0 B. abc C. 1/abc D. None of these
32	An equation of the form ax + by = k is homogeneous linear equation when	A. b = 0, a = 0 B. a = 0,b ≠ 0 C. b = -0,a≠ 0 D. a≠ 0,b≠ 0, k = 0
33	Question Image	
34	Question Image	A. I3 B. rI3 C. r D. none
35	A = [3] is a/an	A. Square matrix B. Scalar matrix C. Diagonal matrix D. Identity matrix

36	If A is a non singular matrix then A^{-1}= _____	
37	For a square matrix A, if A = At, then A is called	A. Matrix B. Transpose C. Symmetric D. Non-symmetric
38	Question Image	A. A(α) - A(β) B. A(α) + A(β) C. A(α-β) D. A(α+β)
39	If A = [a_{ij}] is (m x n) matrix, then transpose of A is of the order	A. m x m B. m x n C. n x n D. n x m
40	Cofactor of an element aij denoted by Aij is	A. (-2)i+j B. Mij C. (-1)i+j Mij D. None of above
41	For non-trival solution |A| is	A. A = 0 B. A^t= 0 C. |A| = 0 D. None of these
42	Question Image	
43	The matrix A = [aij]mxn with m≠n is	A. Rectangular B. Symmetric C. Square D. None
44	Question Image	A. 6, -12, -18 B. -6, 4, 9 C. -6, -4, -9 D. -6, 12, 18
45	Question Image	
46	A matrix in which the number of rows is equal to the number of columns is called a	A. Diagonal matrix B. Rectangular matrix C. Square matrix D. Scalar matrix
47	Question Image	
48	If the matrices A and B are conformable for multiplication then $(AB)^t$= _____	A. AB B. A^tB^t C. B^tA^t D. A^tB
49	(ABC)' =	A. CBA' B. CBA C. C' B' A' D. None of these
50	The transpose of a zero matrix is a _____	A. Column matrix B. Zero matrix C. Row matrix D. Scalar matrix
51	Let A be a square matrix. Then, 1/2 (A-A') is	A. Skew-symmetric B. Symmetric C. Null D. None of the above
52	Question Image	A. 1 B. 0 C. 3

		D. -1
53	Question Image	A. 0 B. 1 C. -A D. -1
54	Question Image	A. 5 C. -5 D. none
55	If A is a skew-symmetric matrix of order n and P, any square matrix of order n.prove that P' AP is	A. Skew-symmetric B. Symmetric C. Null D. Diagonal
56	Question Image	A. Scalar matrix B. Identity matrix C. Null matrix D. Symmetric matrix
57	System of linear equations is inconsistent if	A. System has no solution B. System has one solution C. System has two solution D. None of above
58	If A is singular then |A| = _____	A. 1 B. 0 C. 2 D. None of these
59	Question Image	A. Null matrix B. Triangular matrix C. Unit matrix D. Rectangular matrix
60	Question Image	A. 4A - 3I B. 3A - 4I C. A - I D. None of these
61	Minor of an element a_{ij} is denoted by	A. M_{ij} B. A_{ij} C. |A| D. None of these
62	Question Image	
63	(ABC)' =	A. CBA' B. CBA C. C'B'A D. C'B'A'
64	Question Image	A. 0 B. Independent of a C. Independent of b D. Independent of c
65	If A is skew Hermitian Matrix then which of the following is not skew Hermitian matrix	A. A2 B. A5 C. A3 D. A7
66	The order of the matrix [1 2 3] is	A. 1 x 1 B. 3 x 3 C. 3 x 1 D. 1 x 3
67	Question Image	A. Identity matrix B. Diagonal matrix C. Null matrix D. Hermitian matrix
68	A matrix with a single column is called	A. Column matrix B. Row matrix C. Identity matrix D. Null matrix
69	Question Image	
70	Question Image	A. A B. -A C. A^t D. A⁻
71	If order of A is m x n, then order of A^t is	A. m x m B. n x n C. m x n D. n x m

		D. n x m
72	Trival solution of homogeneous linear equation is	A. (0, 0, 0) B. (1, 2, 3) C. (1, 3, 5) D. a, b and c
73	Question Image	
74	A square matrix all of whose elements except the main diagonal are zeros is called a	A. Null matrix B. Singular matrix C. Symmetric matrix D. Diagonal matrix
75	Question Image	A. 0 B. 1 C. 2 D. 4
76	Question Image	A. 0 B. 1 C. 2 D. 3
77	Question Image	
78	A square matrix A for which A^t= A is called a	A. Column matrix B. Symmetric matrix C. Skew-symmetric matrix D. Row matrix
79	Question Image	A. 5 B. 15 C. 10 D. 20
80	Question Image	A. k3 B. 0 C. 3k D. k6
81	Question Image	
82	Question Image	A. 2 x 2 B. 2 x 3 C. 3 x 2 D. 3 x 3
83	Question Image	
84	Question Image	A. An upper triangular matrix B. A lower triangular matrix C. A diagonal matrix D. A null matrix
85	Matrices are represented by	A. Natural numbers B. Real numbers C. Small letters D. Capital letters
86	Question Image	A. a = -1/2, b = -1 B. a = 1, b = 2 C. a = 2, b = 3 D. None of above
87	Question Image	A. a²b²c² B. 4a²b²c² C. 4abc D. None
88	If for the matrix A,A5 = 1,then A-1=	A. A2 B. A3 C. A D. None of above
89	Question Image	A. A²- 5A + 7I = 1 B. 2A²- 3A + 7I = 0 C. A²- 5A + I = 0 D. A²- 5A + 7I = 0
90	Which of the following is an identity matrix?	D. none of these
91	An equation of the form ax + by = k is homogeneous linear equation when:	
		A. Vector B. Rectangular matrix

92	The matrix A = [aij]1xn is a	B. Rectangular matrix C. Column vector D. Square matrix
93	A and B be two square matrices and if their inverse exist the (AB)-1 =	A. A-1 B-1 B. AB-1 C. A-1B D. B-1A-1
94	Question Image	
95	For trival solution |A| is	A. A B. |A| is non zero C. A = 0 D. None of these
96	Question Image	
97	Question Image	
98	Question Image	
99	Question Image	A. Singular B. Non-singular C. Adjoint D. None of above
100	The number of non zero rows in echelon form of a matrix is called	A. Order of matrix B. Rank of matrix C. Row operation D. None of these
101	Question Image	A. At B. -A C. A D. A-1
102	Question Image	A. Diagonal matrix B. Scalar matrix C. Triangular matrix D. Identity matrix
103	Question Image	A. 3 x 1 B. 1 x 3 C. 3 x 3 D. 1 x 1
104	A square matrix A = [aij] is lower triangular matrix when:	A. aij = 0 for all i < j B. bij = 0 C. cij = 0 D. dij =0
105	Every identity matrix is	A. Row-vector B. Scalar C. Column-vector D. All
106	Question Image	A. -a -b -c B. 1 C. 0 D. -1
107	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
108	Question Image	C. 16 D. None of these
109	Question Image	
110	If the trace of matrix A is 5, then the trace of the matrix 3A is	A. 3/5 B. 5/3 C. 8 D. 15
111	Question Image	A. 1 B. -1 C. 0 D. I
112	Question Image	A. 1 B. 0 C. -1 D. 2
		A. 3 x 2 B. 2 x 3

113	Question Image	B. 2 x 3 C. 3 x 3 D. 2 x 2
114	If there are m rows and n columns in a matrix then its order is	A. m x n B. m x m C. n x n D. n x m
115	Question Image	
116	Question Image	
117	A square matrix A for which A^t= -A is called a	A. Column matrix B. Symmetric matrix C. Skew-symmetric matrix D. Row matrix
118	For non-trival solution |A| is	A. non zero B. A = 0 C. |A| = 0 D. At = 0
119	A diagonal matrix is always	A. Identity B. Triangular C. Scalar D. Non-singular
120	For trival solution |A| is	A. A B. |A| = 0 C. A = 0 D. |A|≠ 0
121	A diagonal matrix in which the diagonal elements are equal is called a	A. Null matrix B. Identity matrix C. Scalar matrix D. Row matrix
122	The transpose of a row matrix is a _____	A. Zero matrix B. Diagonal matrix C. Column matrix D. Row matrix
123	If A and B are two matrices such that AB = B and BA = A then A2 + B2 =	A. 2 AB B. 2 BA C. A + B D. AB
124	The transpose of a column matrix is a _____	A. Zero matrix B. Diagonal matrix C. Column matrix D. Row matrix
125	Question Image	A. Orthogonal B. Involutary C. Idempotent D. Nilpotent
126	Question Image	A. Diagonal matrix B. Scalar matrix C. Triangular matrix D. Identity matrix
127	Question Image	A. 16 B. 256 C. 64 D. 1024
128	A square matrix A = [aij] is upper triangular when	A. cij = 0 B. bij = 0 C. aij = 0 for all i > j D. dij = 0
129	The additive inverse of a matrix A is	D. None of these
130	If A is a skew-symmetric matrix of order n and P, any square matrix of order n, prove that P' AP is	A. Skew-symmetric B. Symmetric C. Null D. Diagonal
131	Question Image	A. 2s² B. 2s³ C. s³ D. 3s³
132	Question Image	A. 2 B. 4 C. 6 D. 8

		D. 8
133	System of linear equation is inconsistent if	A. System has no solution B. System has one solution C. System has two solution D. None of above
134	Question Image	D. all
135	Matrices A = [aij] 2 x 3 and B =[bij] 3 x 2 are suitable for	A. BA B. A² C. AB D. B²
136	Question Image	A. 0 B. 1 C. -2 D. 10
137	Question Image	A. I B. 14 I C. 0 D. None of these
138	Question Image	A. 2 x 2 B. 2 x 3 C. 3 x 2 D. 3 x 3
139	If for the matrix A, A^5= I, then A^{-1}=	A. A² B. A³ C. A D. None of above
140	Question Image	A. 3, -3, 11 B. 3, 3, 11 C. -3, 3, -11 D. -3, -3, 11
141	Question Image	A. K/6 B. 2K C. 3K D. 6K
142	Rank of matrix [1 3 5 0] is	A. 1 B. 3 C. 2 D. 4
143	A and B be two square matrices and if their inverse exist, the $(AB)^{-1}$=	A. A⁻¹B⁻¹ B. AB⁻¹ C. A⁻¹B D. B⁻¹A⁻¹
144	Let A is a 3 x 3 matrix and B is its adjoint matrix. If |B| = 64, then |A| =	
145	If A is any matrix then its additive inverse is	A. A B. A⁻¹ C. A^t D. -A
146	Cofactor of an element $a_{ij}$is defined by	A. (-1)^{i+j}|A| B. (-1)^{i+j}M_{ij} C. (-1)^{i+j}M⁻¹ D. None of these
147	Question Image	A. (2x4) B. (2x7) C. (2x3) D. (7x2)
148	For a square matrix A, if $A = A^t$, then A is called	A. matrix B. Transpose C. Symmetric D. Non-symmetric
149	Question Image	A. -3 B. -7 C. 1 D. 0
150	The transport of a rectangular matrix is a	A. Square matrix B. Rectangular matrix C. Row matrix D. Column matrix
151	The order of the matrix A is 3 x 2 and that of B is 2 x 3. The order of the matrix BA	A. 3 x 3 B. 3 x 2

	is	C. 2 x 5 D. 5 x 2
152	Question Image	D. all are correct
153	The square matrix A is skew-symmetric when At=	A. -B B. -C C. -A D. -D
154	A square matrix A = [aij] is lower triangular matrix when	A. aij = 0 for all i<j B. bij = 0 C. cij = 0 D. dij = 0
155	Question Image	
156	Question Image	A. a = 2, b = 3 B. a = 3, b = 2 C. a = 2, b = 1, 2 D. a = 3, b = 3
157	A matrix with a single row is called a	A. Column matrix B. Row matrix C. Null matrix D. Identity matrix
158	The transport of a square matrix is a	A. Row matrix B. Column matrix C. Square matrix D. Null matrix
159	If A is a non-singular matrix then adj A is	A. Non-singular B. Symmetric C. Singular D. Non defined
160	Question Image	
161	Question Image	A. A⁻ B. A^t C. -A D. A
162	The square matrix A is skew Hermitian when (A)'=	A. A B. A' C. -A D. A
163	Question Image	A. 3K B. K2 C. K3 D. K
164	Question Image	A. a = 4, b = 1 B. a = 1, b = -4 C. a = 0, b = 4 D. a = 2, b = 4
165	If A = |aij| is (m x n) matrix then transpose of A is of the order	A. m x m B. m x n C. n x n D. n x m
166	If A and B are skew-symmetric then (AB)t is	A. At Bt B. AB C. -AB D. BA
167	The matrix A = [aij]mxn with m ≠n is always	A. Symmetric B. Hermition C. Skew-symmetric D. None
168	Question Image	
169	Question Image	
170	Matrices A = [aij] 2 x 3 and B = [bij] 3 x 2 are suitable for	A. BA B. A2 C. AB D. B2