**R E D**

­­­­­­1.The sum of eigen values of A are (1,-1,2) then the eigen values of Adj A are ( )

1. (-2,2,-1) b) (1,1,-2) c) (1,-1,1/2) d) (-1,1,4)

2.Rank of quadratic form 2***x1x2+6x1x3-4x2x3*** ( ) a) 1 b) 2 c) 3 d) 0

3.The matrix AT.A= ( ) a) I b) 1 c) 0 d) 2

4. The diagonal matrix whose leading diagonal elements are equal is called a \_\_\_\_\_( )

a)unit matrix b)square matrix c)scalar matrix d)null matrix

5. (KA)1=KA1  where k is a \_\_\_\_\_\_\_ ( )

a) vector b) scalar c) zero d) one

6. tr(A+B)= ( )

a) tr A + tr B b) tr A - tr B c)tr A / tr B d)tr A \* tr B

7.If A is a square matrix such that A2=I is called ( )

a)voluntary b)involuntary c) idempotent d) nilpotent

 0 i

8.The matrix A= -i 0 is ( )

a) hermitian b)skew-hermitian c)symentric d)none of above

10.If I is a unit matrix of order n then |I|=\_\_\_\_\_\_\_ ( )

a) 1 b) 0 c) 3 d) 5

 3 10 5

11. The characterstic polynomial of -2 -3 -4 is ( )

 3 5 7

1. λ 3+7λ2-16λ+12
2. λ 3-7λ2+16λ-12
3. λ 3-6λ2+15λ-9
4. λ 3+7λ2-16λ/12

 2 0 1

12.The sum and product of the eigen values 0 3 0 is ( )

 1 0 2

1. 6 , 6 b) 7,9 c) 5,4 d) 6, 0

13.If λ is an eigen values of a square matrix A,then the eigen values of the matrix (KA)T  when k=0 is ( )

a) λ/k b) k/λ c) kλ d) None

14.If the order of matrix A is m x p and the order of B is p x n then the of the AB is =

 ( )

a) n x p b) m x p c) m x n d) n x m

15)If A & B are the matrices ,then which of the following is true ( )

a) A+B≠B+A b) (AT)T ≠A c) AB≠BA d) all the above

 1 4

15.What is A, if B= 2 0 is a singular matrix ( )

a)5 b) 6 c) 7 d)8

 2i i

16. If A= i -i then |A|=? ( )

a) 2 b) 3 c ) 4 d)5

17. (AB)T= ( )

a) BTAT b) ATBT c) AB d) BA

 9 0

18. The matrix 0 9 is ( )

a) scalar b) identity c) even d)odd

19.The no of non –zero rows in an echlon form is called ( )

a) reduced echlon form b)rank of matrix

c)conjugate of the matrix d)cofactor of matrix

20.Two matrices are said to be equivalent if ( )

a) they are of the same size and have the same elements

b)one is sub matrix of other

c)there are of same size of same rank

d)Their ranks are of same

21.a square matrix A=aij is a upper triangular if ( )

a) aij=0 for i>j b) aij=0 for i=j c) aij=0 for i<j d) aij=0 for i>j

 0 0 0

22. The rank of 0 0 0 is ( )

a) 0 b) 2 c) 1 d) 3

2 3.The eigen values of unit matrix of order 3 are ( )

1. 0,0,1 b) 0,1,1 c) 1,1,1 d) 0,-1,1

24.If one of the eigen value of square matrix A is zero then the matrix is ( )

a)singular b)non-singular c)symmentric d)skewsymmentric

 1 0 -1

25.The quadratic form associated with symmentric matrix 0 -1 2 is ( )

 -1 2 1

a) x2-y2+z2-2xy-2xz+4yz b)x2-y2+z2+2xy-2xz+4yz c)x2+y2+z2-2xy-2xz+4yz d)x2-y2+z2-2xy-2xz+4yz

**KEY:**

1) c 2) c 3) a 4) c 5) b 6) a 7) b 8) c 9) a 10) a 11)b 12)b 13) c 14) a 15) c 16) b 17) b 18) d 19) a 20) a 21)b 22)a 23) b 24)a 25)a

**Y E L L O W**

1.A vector over a real numbers is called \_\_\_\_\_ ..& the vectorcomplex number is called\_\_\_\_\_\_ ( )

a) real ,complex b) comple , real c) real ,imaginary d) imaginary ,real

2. Trivial solution is also called as ( )

a) one solution b) infinity solution c) zero solution d) two’s solution

3. The solution of a linear system of equations can be found out by numerical methods known as \_\_\_\_\_\_\_ ( )

a)direct method b)iterative method c) both a & b d) none of these

4.A square matrix A is symmentric if ( )

a) AT=-A b)AA-1=I c) AT=A d) AAT=I

5.If A & B are skew-symmentric matrix then A+B is ( )

a) orthogonal b)Unitary c) Skew-symmentric d)Symmentric

6.If A&B are matrices and if AB is defined then the rank of AB is equal to ( )

a)rank of A b)rank of B c)≤min {rank A , rank B} d)≤max {rankA,rankB}

7.(A-λI)is called ………. ( )

 a)singular matrix b)non singular matrix c)charecterstic matrix d)proper matrix

8.The eigen values of hermition matrix are …………….. ( )

a)purely b)regid c)real d)imaginary

9.Diagonalise of a matrix Dn =………. ( )

a)PAP b)PTAP c)PTAnP d)P-1AnP

10.The eigen values of skew hermistion matrix are,,, ( )

a)0 b)1 c)-1 d)real

11.if A and B are 3 x 4 matrix ,then the rank of (A+B) IS ( )

a)4 b)≤3 c)≥0 d)none

12.A non zero matrix A is said to be …………. ( )

a)An=0 b)An= -1 c)An=1 d)none

 0 1

13.if the matrix A = 0 0 is …………. ( )

a)daignolised b)not daignolisable c)imaginary d)elimantary

14.sum of the charectarstics roots of matrix A=to the ( )

a)sum of the principal daignol elements of A

b)place of the matrix A

c)both A and B

d)non of above

15.if λ is an eigen value of A then K+ƛ(K≠0)the eigen value of the matrix ( )

a)k+AI b)A+Ki c)A+λk d)A-1 +KI

16.The trace of a square matrix A is equal to ( )

a) sum of eigen values b)product of eigen values c ) |A| d)none of these

17.Any set of vectors which include the zero vector is ( )

a)linear independent b)linearly dependant c)cannot be linealy dependant d)none

18. If λi,i=1,2,3…,n are the eigen values of A , then the values of the matrix (A-λI)2are ( )

a) 0 b) (λ-λ)2,i=1,2,3..n c) (λ-λi),i=1,2,3..n d) none

19.The quadratic form corresponding to the symmentric matrix ( )

a) x2+4xy-4y2 b) x2-4xy+4y2 c) x2-2xy+4y2 d) x2+2xy-2y2

20)The modulus of each characteristics root of a unitary matrix is ( )

a) 0 b) 1 c) 2 d) 3

21.the quadratic form is +ve definite when ( )

a) all the eigen values are ≥0 and atleast one eigen value is zero

b)all eigen values are +ve

c)some eigen values are +ve

d)none of above

22. If the eigen values of are 0,0,6 then the rank of quadratic form is ( )

a) 1 b)2 c)3 d) 0

23.The index and signature of quadratic form 5x2+2y2+2z2+6yz are ( )

a) 2 ,1 b) 3 ,1 c) 3 ,2 d) 3,3

24.If A is a hermitian then iA is ( )

a) hermitian b)skew-hermitian c) skew-symmentric d) null matrix

 1+i -1+i

25.The matrix U=$½$ 1+i 1-i is ( )

a )nilponent b)orthogonal c)hermitian d)unitary

**KEY:**

1)a 2)c 3) c 4)c 5)c 6)c 7)c 8)a 9)d 10) b 11)a 12) c 13)d 14) a 15)b 16) b 17) a 18)b 19)a 20) b 21)b 22)a 23)a 25)b 25) d

**G R E E N**

1.If A&B are two invertible square matrix ,then the eigen values of AB and BA are ( )

a) equal b) different c) not determined d) none

2. If 1,2,3 are the eigen values of a square matrix A ,then the eigen values of the square matrix adj.A are ( )

a) 1,1/2,1/3 b)1,4,9 c) 6, 3, 2 d) 9,3,6

3.If the trace of 2x2 matrix A is 5 and determinant is 4 ,then the eigen values of A ( )

a) 2 ,2 b) -2, 2 c) -1 ,-4 d) 1 , 4

4. X+Y+W=0; Y+Z=0; X+Y+Z+W=0; X+Y+2Z=0 rank of the matrix is ( )

a) 2 b) 3 c) 4 d) 0

5. A square matrix A of order n x n is sometimes called as a ( )

a) rowed matrix b) n-rowed matrix c) column matrix d)n-column

6.If A,B are two matrices of the same type (order)then A+(-B) is taken has ( )

a) A-(-B) b) A=B c) A-B d) A+B

7.In the product AB the matrix A is called \_\_\_\_\_\_ and B is called \_\_\_\_\_\_\_ ( )

a)pre-dominant, post dominant b)pre-factor , post factor

c)pre-matrix ,post matrix d) positive , negative

8.If A is a square matrix such that A2=I then A is called ( )

a) unitary b)Idempotent c) voluntary d)involuntary

9.If A is a orthogonal then |A| = ( )

a) 1 b) -1 c)±1 d) 0

10.If AѲ&BѲ be the transpose conjugates of A&B respectively then (A±B)Ѳ ( )
a) AѲ±BѲ b) AѲ+BѲ c)AѲ-BѲ d) AѲ\*BѲ

11.Rank of aunit matrix of order 4 is …. ( )

a)2 b)3 c)1 d)4

12.The matrix A= a+ic -b+id is unitary if and only if a2+b2+c2+d2= ( )

 b+id a - ic

a)0 b)1 c) – 1 d) i

13.if A= 4 2 then(A-2I)(A-3I) = ( )

 -1 1

a)0 b)1 c) -1 2 d) 0 0

 1 4 0 0

14.a sqare matrix A its transpose AT have the same … ( )

a)eigen values b)eigens transpose c)eigen vector d)polynomial

15.If the eigen values of A are different then they are ( )

a)linear b)non linear c)equal d)orthogonal

 0 1 1

16If A=. 1 0 1 then the nature of the quadratic form XTAX ( )

 1 1 0

a)positive definite b)positive semi definite c)negative definite d)in definite

17.if the eigen values of A or 1,3+$\sqrt{8}$ ,3-$\sqrt{8 }$ then the index and signature of the quadratic form XTAX are ( )

a) 1,2 b) 3, 1 c) 3,2 d) 3,3

 1 0

18.If A = 0 3 find A50 ( )

 a) 1 0 b) 1 0 c) 1 0 d) 1 0

 0 3 0 350  503 0 0 1

19.The quadratic form corresponding to the symmentric matrix ( )

a) x2+4xy-4y2 b) x2-4xy+4y2 c) x2-2xy+4y2 d) x2+2xy-2y2

20.3x2 +5xy-2y2 is a \_\_\_\_\_\_\_\_\_\_\_\_ in two varabels X & Y ( )

a)conical form b)quadratic form c)real form d)none

 a h g

21.The latent roots of o b o are ( )

 o o c

1. a,b,c b)1/a,1/b,1/c c) h, g, o d)b,g,o

 22.caylehmilton thermo states that every square matri satisfies its own ( )

 a)characteristic polynomial b)characteristic of eqation c)none

23.if the trace of 2x2 matrix A is 5 and the determined is 4 ,then the eigen values of A are ( )

a)2,2 b)-2,2 c)-1,4 d)1,4

24.The eigen values of an idopodent matrix are ( )

a)0 only b)0and 1 only c)0 and -1 only d)-1 and 1 only

25.To find the inverse of the matrix using columns operation only we should proceed as follows A =….. ( )

a)AIm b)AIn c)AI d)none

**KEY:**

1)a 2)c 3) d 4)a 5)d 6) d 7) b 8)d 9)c 10) a 11)d 12)b 13) a 14) c 15) b 16)a 17)d 18)b 19)a 20)b 21)a 22)b 23) d 24)b 25)b