For any subspace W of a vector space V, which one is not the axiom for subspace.

0 must be in W.

**For all u, v in W and u – v must be in W.**

For all u, v in W and u.v must be in W.

For any scalar k and u in W then k.u in W.

Which one is not the axiom for vector space?

0 + u = u

**0.u = u**

1.u = u

u + v = v + u

The Gauss-Seidel method is applicable to strictly diagonally dominant matrix.

**TRUE**

FALSE

By using determinants, we can easily check that the solution of the given system of linear equation exits and it is unique.

At what condition det(AB)=(detA)(detB) is possible?

**When A and B are n x n matrices**

When A is a row matrix

When A and B are m x n matrices

When B is a column matrix

For any 3x3 matrix A where det (A) = 3, then det (2A) = \_\_\_\_\_\_\_\_.

24

20

15

**6**

If a multiple of one row of a square matrix A is added to another row to produce a matrix B, then which of the following condition is true?

**detB = detA**

detB = k detA

detA detB = 0

detA detB = detA

The Jacobi’s method is a method of solving a matrix equation on a matrix that has no zeros along its main diagonal.

**TRUE**

FALSE

While using the Cramer’s rule, if determinant D = 0, and other determinant is not zero then how many solutions are there?

Many solutions

**No solution**

Two solutions

One solution

Which of the following is all permutations of {1,2}?

**(1,2,2,1)**

Question # 1 of 10 ( Start time: 09:52:17 PM ) Total Marks: 1  
By using determinants, we can easily check that the solution of the given system of linear equation exits and it is unique.  
Select correct option:  
  
FALSE  
**TRUE**

Question # 2 of 10 ( Start time: 09:53:11 PM ) Total Marks: 1  
If a multiple of one row of a square matrix A is added to another row to produce a matrix B, then which of the following condition is true?  
Select correct option:  
  
**detB = k detA**detB = detA  
detA detB = 0  
detA detB = detA

Question # 3 of 10 ( Start time: 09:54:09 PM ) Total Marks: 1  
At what condition the Cramer’s formula is valid for linear systems?  
Select correct option:  
  
**When matrix is n x n**When det(A) is equal to zero  
When matrix is m x n  
When det(A) in not equal to zero

Question # 4 of 10 ( Start time: 09:54:44 PM ) Total Marks: 1  
A matrix has not the same determinant if we add a multiple of a column to another column.  
Select correct option:  
  
**TRUE**FALSE

Question # 5 of 10 ( Start time: 09:55:30 PM ) Total Marks: 1  
The Jacobi’s method is a method of solving a matrix equation on a matrix that has no zeros along its main diagonal.  
Select correct option:  
  
**TRUE**FALSE

Question # 6 of 10 ( Start time: 09:56:10 PM ) Total Marks: 1  
Which of the following is the volume of the parallelepiped determined by the columns of A where A is a 3 x 3 matrix?  
Select correct option:  
  
**|det A|**[A]  
det A  
A^(-1) ,that is inverse of A

Question # 7 of 10 ( Start time: 09:57:25 PM ) Total Marks: 1  
For any 3x3 matrix A where det (A) = 3, then det (2A) = \_\_\_\_\_\_\_\_.  
Select correct option:  
  
24  
20  
15  
**6**

Question # 8 of 10 ( Start time: 09:58:24 PM ) Total Marks: 1  
Which one is not the axiom for vector space?  
Select correct option:  
  
0 + u = u  
**0.u = u**1.u = u  
u + v = v + u

2

Question # 9 of 10 ( Start time: 09:58:58 PM ) Total Marks: 1  
Which of the following is NOT the axiom for vector space where u, v, w in V are set of vectors and l, m, n are scalars?  
Select correct option:  
  
u + (v + w) = (u + v) + w  
**u.v =v.u**l (u + v)= l u + l v  
(l +m) u= I u+ m u

Question # 10 of 10 ( Start time: 09:59:48 PM ) Total Marks: 1  
If two rows or columns of a square matrix are identical, then det (A)wil be \_\_\_\_\_\_\_.  
Select correct option:  
  
**zero**non zero  
one  
positive

Question # 1 of 10 ( Start time: 10:30:38 PM ) Total Marks: 1  
If A is strictly diagonally dominant, then A is \_\_\_\_\_\_\_\_\_.  
Select correct option:  
  
**invertible**singular  
symmetric  
scalar  
  
  
Question # 2 of 10 ( Start time: 10:31:17 PM ) Total Marks: 1  
The Gauss-Seidel method is applicable to strictly diagonally dominant matrix.  
Select correct option:  
  
**TRUE**FALSE  
  
  
  
Question # 3 of 10 ( Start time: 10:32:00 PM ) Total Marks: 1  
If the absolute value of each diagonal entry exceeds the sum of the absolute values of the other entries in the same row then a matrix A is called:  
Select correct option:  
  
invertible  
**strictly diagonally dominant**diagonally  
scalar  
  
  
Question # 4 of 10 ( Start time: 10:33:26 PM ) Total Marks: 1  
The Jacobi’s method is a method of solving a matrix equation on a matrix that has no zeros along its main diagonal.  
Select correct option:  
  
**TRUE**FALSE  
  
Question # 5 of 10 ( Start time: 10:33:52 PM ) Total Marks: 1  
Which one is not the axiom for vector space?  
Select correct option:  
  
0 + u = u  
**0.u = u**1.u = u  
u + v = v + u  
  
Question # 6 of 10 ( Start time: 10:34:16 PM ) Total Marks: 1  
Let W = {(x, y) such that x, y in R and x = y}. Is W a vector subspace of plane.  
Select correct option:  
  
**YES**NO  
  
  
Question # 7 of 10 ( Start time: 10:34:58 PM ) Total Marks: 1  
If A is a triangular matrix, then det(A) is the product of the entries on the \_\_\_\_\_\_\_\_.  
Select correct option:  
  
**main diagonal of A**first two rows of A  
diagonal of A  
first two columns of A  
  
Question # 8 of 10 ( Start time: 10:35:59 PM ) Total Marks: 1  
By using determinants, we can easily check that the solution of the given system of linear equation exits and it is unique.  
Select correct option:  
  
FALSE  
**TRUE**  
Question # 9 of 10 ( Start time: 10:36:55 PM ) Total Marks: 1  
If a matrix A is invertible than adj(A) is also invertible.  
Select correct option:  
  
**TRUE**FALSE  
  
Question # 10 of 10 ( Start time: 10:37:57 PM ) Total Marks: 1  
If all the entries of a row or a column of a square matrix are zero, then det (A) will be \_\_\_\_\_\_\_\_\_\_\_\_\_.  
Select correct option:  
  
**zero**infinity  
one  
non zero

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For which of the matrix, the Gauss-Seidel method is applicable

Top of Form



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Bottom of Form

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Bottom of Form

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Bottom of Form

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Consider a system of linear equations A x =b where A is a3 ×3 matrix having 3 pivot positions, then which

statement is false about the system Ax =b

(a) System has unique solution.

(b) Rank of the matrix is 3.

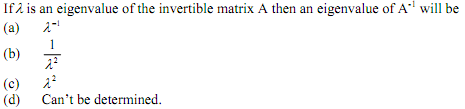
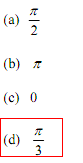
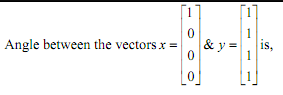
(**c) There is only one free variable in solution of that system.**

(d) The associated homogeneous system Ax =0 has only trivial system.

If a finite set S of non zero vectors span a vector space V, then some subset of S is a basis for V.

1. True

**2. false**



D

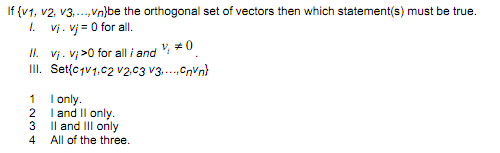
If rank of a3 x 5 matrix is 3 then dimension of its Null space is

(a) 0

(b) 3

(c) 2

(d) We can’t say anything



1

If matrix A has zero as an eigenvalue then which statement(s) about A must be true.

I. Matrix A is not invertible.

II. Matrix A will also have an eigenvalue 2.

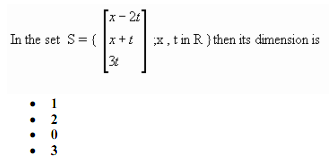
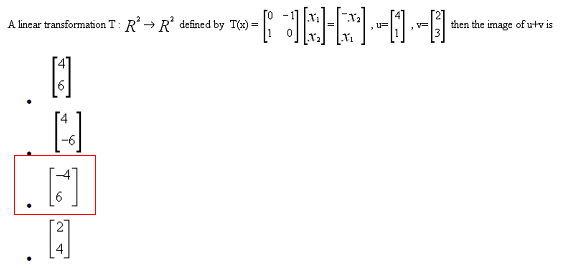
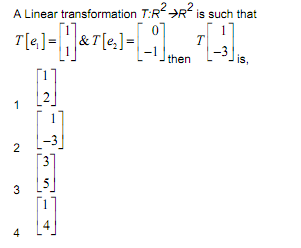
III. Matrix is diagonalizable.

1 II and III only.

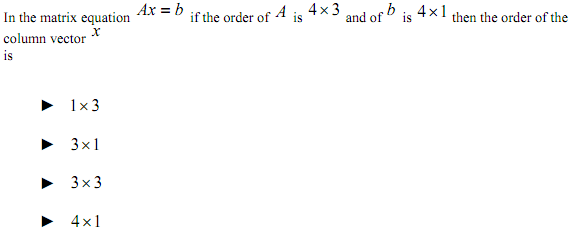
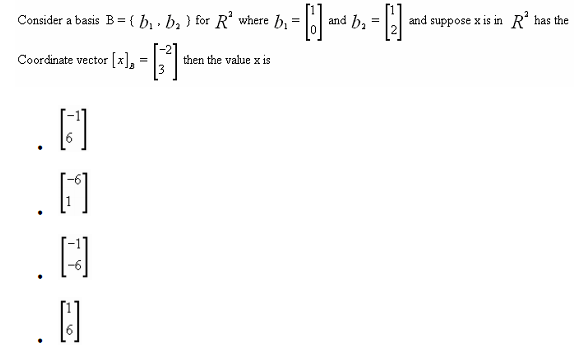
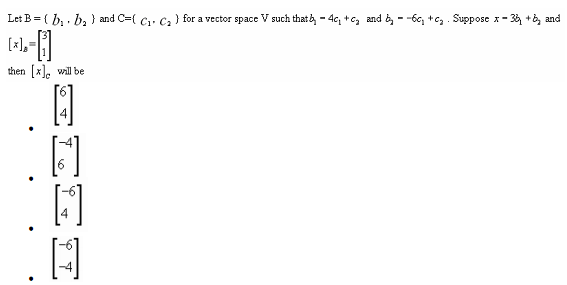
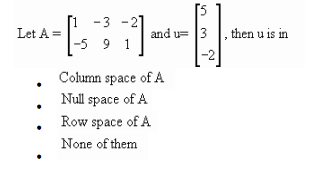
**2 I only.** (true)

3 II and III only.

4 All three.



* 1
* **2**
* 0
* 3

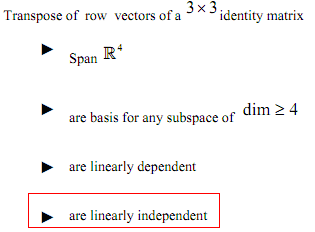


1 x 3

**3 x 1**

3 x 3

4 x 1



Determinant of a non-invertible(singular) matrix always

**► vanish**

► unity

► non zero negative

► non zero positive

Rank of a zero matrix of any order is

**► zero**

► three

► four

► nine



► Zero

► One

**► Two**

► Three

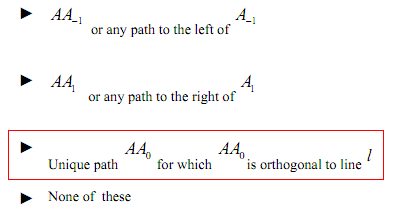
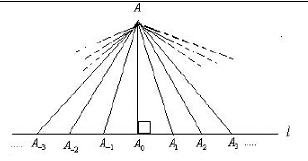


► **Are orthogonal**

►Having their inner product zero

► Can span a subspace while both passing through the origin

► All above statements are equivalent

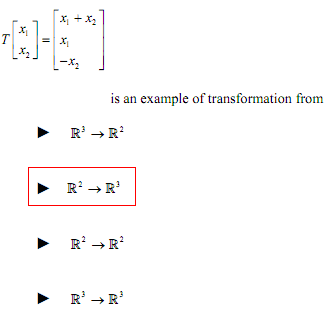


► Infinite many solutions

**► Empty solution**

► Unique, non-trivial solution

► Unique, trivial solution

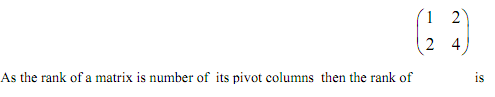


**► Not defined**

►One

► Zero

► Arbitrary

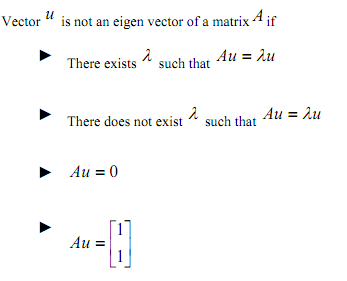
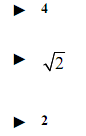
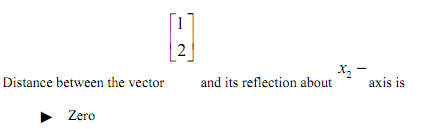
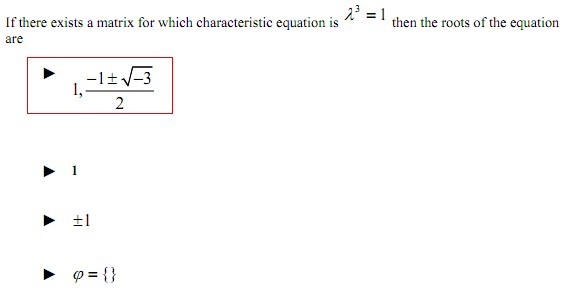


► 4

► 2

**► 1**

► Inconclusive



► Infinite many solutions

**► Empty solution**

► Unique, non-trivial solution

► Unique, trivial solution

|  |
| --- |
| Question No: 1 ( Marks: 2 ) - Please choose one |
| |  | | --- | |  | | The characteristics polynomial for the matrix A= is   |  |  |  | | --- | --- | --- | |  |  |  | |  | ► |  | |  | ► |  | |  | ► |  | |  | ► |  | | |
| Question No: 2 ( Marks: 2 ) - Please choose one |
| |  | | --- | |  | | Let A=PA then what will be where A= , D=   |  |  |  | | --- | --- | --- | |  |  |  | |  | ► |  | |  | ► |  | |  | ► |  | |  | ► | None of the other | | |
| Question No: 3 ( Marks: 2 ) - Please choose one |
| |  | | --- | |  | | The origin of the dynamical system =A for the matrix A= is   |  |  |  | | --- | --- | --- | |  |  |  | |  | ► | Attractor | |  | ► | Repellor | |  | ► | Saddle point | |  | ► | None of them | | |
| Question No: 4 ( Marks: 2 ) - Please choose one |
| |  | | --- | |  | | The distance between the vectors u=(7,1) and v=(3,2)is   |  |  |  | | --- | --- | --- | |  |  |  | |  | ► |  | |  | ► |  | |  | ► |  | |  | ► |  | | |
| Question No: 5 ( Marks: 2 ) - Please choose one |
| |  | | --- | |  | | The vectors , , are   |  |  |  | | --- | --- | --- | |  |  |  | |  | ► | Parallel | |  | ► | **Orthogonal** | |  | ► | Not Orthogonal | |  | ► | Not parallel | | |

**Question No: 1 ( Marks: 1 ) - Please choose one**



Reduced echelon form of the matrix is



**►**



**►**



**►**



**►**



**Question No: 2 ( Marks: 1 ) - Please choose one**



A matrix that results from applying a single elementary row operation to an identity matrix is called

**►** Invertible matrix

**►** Singular matrix

**►** Scalar matrix

**►** Elementary matrix

**Question No: 3 ( Marks: 1 ) - Please choose one**



For an n×n matrix (At)t =

**►** At

**► A**

**►** A-1

**►** (A-1)-1

**Question No: 4 ( Marks: 1 ) - Please choose one**



What is the largest possible number of pivots a 46 matrix can have?

► 4 (true)

**►** 6

**►** 10

**►** 0

**Question No: 5 ( Marks: 1 ) - Please choose one**



The characteristic polynomial of a 55 matrix is ,the eigenvalues are



**►** 0,-5, 9

**►** 0,0,0,5,9

► 0,0,0,-5,9 (true)

**►** 0,0,5,-9

**Question No: 6 ( Marks: 1 ) - Please choose one**



Find the characteristic equation of the given matrix



**►**



**►**



**►**



**►**



**Question No: 7 ( Marks: 1 ) - Please choose one**



A is diagonalizable if Where



**►** D is any matrix and P is an invertible matrix

**►** D is a diagonal matrix and P is any matrix

**► D is a diagonal matrix and P is invertible matrix**

**►** D is a invertible matrix and P is any matrix

**Question No: 8 ( Marks: 1 ) - Please choose one**



The inverse of an invertible lower triangular matrix is

**► lower triangular matrix**

**►** upper triangular matrix

**►** diagonal matrix

**Question No: 9 ( Marks: 1 ) - Please choose one**



If P is a parallelepiped in R3, then

{volume of T (P)} = |detA|. {volume of P}

**►** Where T is determined by a matrix A



**►** Where T is determined by a matrix A



**►** Where T is determined by a matrix A



**►** Where T is determined by a matrix A



**Question No: 10 ( Marks: 1 ) - Please choose one**



Let A be a matrix of rank then row space of A has dimension



**►**



**►**



**►**



**►**



**Question No: 11 ( Marks: 1 ) - Please choose one**



The dimension of the vector space is



**►** 4

**►** 3

**►** 5

**►** 1

**Question No: 12 ( Marks: 1 ) - Please choose one**



Let .For the weighted Euclidean inner product



**►** 2

**► -2**

**►** 3

**►** -3

**Question No: 13 ( Marks: 1 ) - Please choose one**



Let A be matrix whose entries are real.If is an eigenvalue of A with x a corresponding eigenvector in , then



**►**



**►**



**►**



**►**



**Question No: 14 ( Marks: 1 ) - Please choose one**



Suppose that has eigenvalues 2 and 0.5 .Then origin is a



**►** Saddle point

**►** Repellor

**►** Attractor

**Question No: 15 ( Marks: 1 ) - Please choose one**



Which one is the numerical method used for approximation of dominant eigenvalue of a matrix.

**►** Power method

**►**  Jacobi’s method

**► Guass Seidal method**

**►** Gram Schmidt process

**Question No: 16 ( Marks: 1 ) - Please choose one**



The matrix equation represents a system of linear equations commonly referred to as the



**►** normal equations for



**►** normal equations for



**►** normal equations for



**►** normal equations for



**Question No: 17 ( Marks: 1 ) - Please choose one**



Let have eigenvalues 2, 5, 0,-7, and -2. Then the dominant eigenvalue for A is



**►**



**►**



**►**



**►**



**Question No: 18 ( Marks: 1 ) - Please choose one**



If W is a subspace of , then the transformation that maps each vector x in into its orthogonal x in W is called the orthogonal projection of



**►** in



**►** in W



**►** in x



**Question No: 19 ( Marks: 1 ) - Please choose one**



If ,and then row reduction of to



Produces a matrix P that satisfies

**►** for all x in V



**►** for all x in V



**►** for all x in V



**►** for all x in V



**Question No: 20 ( Marks: 1 ) - Please choose one**



The Casorati matrix for the signals ***1k***, (***-2***)***k*** and ***3k*** is

**►**



**►**



**►**



Which statement about the set S is false where S = {(1, 1, 3), (2, 3, 7),(2, 2, 6)}

(a) The set S contain an element which is solution of the equation 5x – y- z = 0

**(b) The Set S is linearly independent.**

(c) The set S contain two elements which are multiple of each other.

(d) The Set S is linearly dependent.

How many subspaces *R2* have?

(a) only two: {0} and R2

(b) Only four: {0} *x*- axis and *y* -axis and R2

**(c) Infinitely many.**

(d) None of the above.

The set of vectors {(5,0,0), (7,2,-6), (9,4,-8)} is,

􀂾a) Linearly independent

􀂾**b) Linearly dependent**

􀂾c) Basis of R3

**Question No: 1 ( Marks: 1 ) - Please choose one**

If A is a  matrix, the area of the parallelogram determined by the columns of A is



►



**► det A**

► adj A

**Question No: 2 ( Marks: 1 ) - Please choose one**

Cramer’s rule leads easily to a general formula for



**► the inverse of an matrix A**



► the adjugate of an matrix A



► the determinant of an matrix A



**Question No: 3 ( Marks: 1 ) - Please choose one**

The transpose of an lower triangular matrix is



► lower triangular matrix

**► upper triangular matrix**

► diagonal matrix

**Question No: 4 ( Marks: 1 ) - Please choose one**

The transpose of an upper triangular matrix is



**► lower triangular matrix**

► upper triangular matrix

► diagonal matrix

**Question No: 5 ( Marks: 1 ) - Please choose one**

Let A be a square matrix of order with , then



**► 168**

► 186

► 21

► 126

**Question No: 6 ( Marks: 1 ) - Please choose one**

A basis is a linearly independent set that is as large as possible.



**► True**

► False

**Question No: 7 ( Marks: 1 ) - Please choose one**

Let A be an matrix. If for each b in the equation Ax=b has a solution then



**► A has pivot position in only one row (may be this option is true)**

► Columns of A span



► Rows of A span



**Question No: 8 ( Marks: 1 ) - Please choose one**

Reduced echelon form of the matrix is



►



►



**►**



►



**Question No: 22 ( Marks: 3 )**



find that is invertible or not T(X1,X2)=T(6X1 +8X2 , 5X1 -8X2)

**Question No: 23 ( Marks: 3 )**



Find the volume of parallelogram of the vertices (1,2,4) (2,4,-7) and (-1,-3,20

**Question No: 24 ( Marks: 2 )**

Which of the following is true? If V is a vector space over the field F.(justify your answer)



(a)



(b)



(c)



**Question No: 25 ( Marks: 5 )**

Let is this in R3 or not?



**Question No: 26 ( Marks: 5 )**

Justify that A2=I if A=, if and only M2=I. justify your answer by portioned matrix of M



M=



**Question No: 1 ( Marks: 1 ) - Please choose one**

If A is a matrix, the area of the parallelogram determined by the columns of A is



►



**► det A**

► adj A

**Question No: 2 ( Marks: 1 ) - Please choose one**

Cramer’s rule leads easily to a general formula for



**► the inverse of an matrix A**



► the adjugate of an matrix A



► the determinant of an matrix A



**Question No: 3 ( Marks: 1 ) - Please choose one**

The transpose of an upper triangular matrix is



► lower triangular matrix

► upper triangular matrix

**► diagonal matrix**

**Question No: 4 ( Marks: 1 ) - Please choose one**

Let A be a square matrix of order with , then



**► 168**

► 186

► 21

► 126

**Question No: 5 ( Marks: 1 ) - Please choose one**

A basis is a linearly independent set that is as large as possible.



**► True**

► False

**Question No: 6 ( Marks: 1 ) - Please choose one**

Col A is all of if and only if



► the equation has a solution for each b in



**► the equation has a solution for each b in**



► the equation has a solution for a fixed b in .



**Question No: 7 ( Marks: 1 ) - Please choose one**

If and , then the partitions of A and B



► are not conformable for block multiplication

**► are conformable for AB block multiplication**

► are not conformable for BA block multiplication

**Question No: 8 ( Marks: 1 ) - Please choose one**

Two vectors are linearly dependent if and only if they lie



► on a line parallel to x-axis

**► on a line through origin**

► on a line parallel to y-axis

**Question No: 9 ( Marks: 1 ) - Please choose one**

The equation x = p + t v describes a line



► through v parallel to p

► through p parallel to v

**► through origin parallel to p**

**Question No: 10 ( Marks: 1 ) - Please choose one**

Let A be an matrix. If for each b in the equation Ax=b has a solution then



**► A has pivot position in only one row**

► Columns of A span



► Rows of A span



**Question No: 11 ( Marks: 1 ) - Please choose one**

Given the system the augmented matrix for the system is



►



►



►



**►**



**Question No: 12 ( Marks: 1 ) - Please choose one**

Consider the linear transformation *T* such that is the matrix of linear transformation then *T* is



►



►



►



►



**Question No: 13 ( Marks: 1 ) - Please choose one**

Ifthenwill be



► 15

**► 45**

► 135

► 60

**Question No: 14 ( Marks: 1 ) - Please choose one**

For an n×n matrix (At)t =



► At

**► A**

► A-1

► (A-1)-1

**Question No: 15 ( Marks: 1 ) - Please choose one**

Each Linear Transformation T from Rn to Rm is equivalent to multiplication by a matrix A of order



► m´n

**► n´m**

► n´n

► m´m

**Question No: 16 ( Marks: 1 ) - Please choose one**

Reduced echelon form of the matrix is



►



►



**►**



►



**Question No: 17 ( Marks: 2 )**

Find vector and parametric equations of the plane that passes through the origin of ***R3*** and is parallel to the vectors  ***v*1** = (1, 2, 5) and ***v*2** = (5, 0, 4).



**Question No: 18 ( Marks: 2 )**

Which of the following is true? If V is a vector space over the field F.(justify your answer)



(a)



(b)



(c)



**Question No: 19 ( Marks: 3 )**

Let For what value(s) of h is ***y*** in the plane generated by ***v1***and ***v2***?



**Question No: 20 ( Marks: 5 )**

With T defined by T(x)= Ax , find a vector x whose image under T is b, and determine whether x is unique.



**Question No: 21 ( Marks: 10 )**

Given A and b , write the augmented matrix for the linear system that corresponds to the matrix equation .Then solve the system and write the solution as a vector.



**Question No: 1 ( Marks: 1 ) - Please choose one**

If for a linear transformation the equation T(x)=0 has only the trivial solution then T is



► one-to-one

► onto

**Question No: 2 ( Marks: 1 ) - Please choose one**

Which one of the following is an elementary matrix?



►



►



►



►



**Question No: 3 ( Marks: 1 ) - Please choose one**

Let and let k be a scalar .A formula that relates det kA to k and det A is



► det kA= k det A

► det kA = det (k+A)

► det k A = k2 det A

► det kA = det A

**Question No: 4 ( Marks: 1 ) - Please choose one**

The equation x = p + t v describes a line



► through v parallel to p

► through p parallel to v

► through origin parallel to p

**Question No: 5 ( Marks: 1 ) - Please choose one**

Determine which of the following sets of vectors are linearly dependent.



►



►



►



**Question No: 6 ( Marks: 1 ) - Please choose one**

Every linear transformation is a matrix transformation



► True

► False

**Question No: 7 ( Marks: 1 ) - Please choose one**

A null space is a vector space.



► True

► False

**Question No: 8 ( Marks: 1 ) - Please choose one**

If two row interchanges are made in succession, then the new determinant



► equals to the old determinant

► equals to -1 times the old determinant

**Question No: 9 ( Marks: 1 ) - Please choose one**

The determinant of A is the product of the pivots in any echelon form U of A , multiplied by (-1)r , Where r is



► the number of rows of A

► the number of row interchanges made during row reduction from A to U

► the number of rows of U

► the number of row interchanges made during row reduction U to A

**Question No: 10 ( Marks: 1 ) - Please choose one**

If A is invertible, then det(A)det(A-1)=1.



► True

► False

**Question No: 11 ( Marks: 1 ) - Please choose one**

A square matrix is lower triangular if and only if for



►



►



►



►



**Question No: 12 ( Marks: 1 ) - Please choose one**

The product of upper triangular matrices is



► lower triangular matrix

► upper triangular matrix

► diagonal matrix

**Question No: 13 ( Marks: 1 ) - Please choose one**

The matrix multiplication is associative



► True

► False

**Question No: 14 ( Marks: 1 ) - Please choose one**

We can add the matrices of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.



**► same order**

► same number of columns.

► same number of rows

► different order

**Question No: 15 ( Marks: 1 ) - Please choose one**

By solving system of equations with iterative method, we stop the process when the entries in two successive iterations are \_\_\_\_\_\_\_\_.



► repeat

► large difference

► different

**Question No: 16 ( Marks: 1 ) - Please choose one**

Jacobi’s Method is \_\_\_\_\_\_\_\_\_\_\_\_ converges to solution than Gauss Siedal Method.



► slow

► fast

► better

**Question No: 17 ( Marks: 1 ) - Please choose one**

A system of linear equations is said to be homogeneous if it can be written in the form \_\_\_\_\_\_\_\_\_\_\_\_\_\_.



► AX = B

► AX = 0

► AB = X

► X = A-1

**Question No: 18 ( Marks: 1 ) - Please choose one**

The row reduction algorithm applies only to augmented matrices for a linear system.



► True

► False

**Question No: 19 ( Marks: 1 ) - Please choose one**

Whenever a system has no free variable, the solution set contains many solutions.



► True

► False

**Question No: 20 ( Marks: 1 ) - Please choose one**

Which of the following is not a linear equation?



►



►



►



►



**Question No: 21 ( Marks: 2 )**

If a square idempotent matrix A is non singular then show that A is equal to the identity matrix I.



**Question No: 22 ( Marks: 2 )**

Let, and .It can be verified that Use this information to find a basis for H.



**Question No: 23 ( Marks: 3 )**

Find



**Question No: 24 ( Marks: 3 )**

Determine bases for the plane 3x – 2y + 5z = 0 as a subspace of ***R3***



**Question No: 25 ( Marks: 5 )**

Show that is invertible and find its inverse.



**Question No: 26 ( Marks: 5 )**

Find the condition for r and s such that the vectors are linear dependent.



Matrix [] is an example of



► Non-Singular matrix

► Square matrix

► Column vector

► Row vector

Standard matrix for transformation T(x1, x2 ) = (−x1 + x2 , x1 − x2 )is



* None of these

Matrix is singular if



► Ad=bc

► ad ≠ bc

► ad − bc = 1

► None of these

$$ Quiz….

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| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | All the lines those passes through origin are not the subspace of a plane. | | **Select correct option:** | |  | | |  |  | | --- | --- | |  | correct | |  |  | | | |

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Quiz Start Time: 09:54 PM** | |  |  |  | | --- | --- | --- | | Time Left | 17  sec(s) |  | | | | |  |  | | --- | --- | | **Question # 2 of 10 ( Start time: 09:55:53 PM )** | **Total Marks:** 1 | | If a system of equations is solved using the Gauss-Seidel method, then which of the following is the most appropriate answer about the matrix M that is derived from the coefficient matrix ? | | | **Select correct option:** | | |  | | | |  |  | | --- | --- | |  |  | |  |  | |  | correct | |  |  | | | | |

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| Why inverse of the matrix A= [1 2] is NOT possible? |
| **Select correct option:** |
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| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | Let W = {(1, y) such that y in R}. Is W a vector subspace of plane. | | **Select correct option:** | |  | | |  |  | | --- | --- | |  |  | |  | correct | | | |

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Quiz Start Time: 09:54 PM** | |  |  |  | | --- | --- | --- | | Time Left | 7  sec(s) |  | | | | |  |  | | --- | --- | | **Question # 5 of 10 ( Start time: 10:00:20 PM )** | **Total Marks:** 1 | | If M is a square matrix having two rows equal then which of the following about the determinant of the matrix is true? | | | **Select correct option:** | | |  | | | |  |  | | --- | --- | |  |  | |  |  | |  |  | |  | correct | | | | |

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Quiz Start Time: 09:54 PM** | |  |  |  | | --- | --- | --- | | Time Left | 12  sec(s) |  | | | | |  |  | | --- | --- | | **Question # 6 of 10 ( Start time: 10:01:48 PM )** | **Total Marks:** 1 | | If a system of equations is solved using the Jacobi’s method , then which of the following is the most appropriate answer about the matrix M that is derived from the coefficient matrix ? | | | **Select correct option:** | | |  | | | |  |  | | --- | --- | |  |  | |  |  | |  |  | |  | correct | | | | |

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| |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | Which of the following is the volume of the parallelepiped determined by the columns of A where A is a 3 x 3 matrix? | | **Select correct option:** | |  | | |  |  | | --- | --- | |  | correct | |  |  | |  |  | |  |  | | | |

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| If all the entries of a row or a column of a square matrix are zero, then det (A) will be \_\_\_\_\_\_\_\_\_\_\_\_\_. |
| **Select correct option:** |
|  |
| |  |  | | --- | --- | |  | correct | |  |  | |  |  | |  |  | |

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| |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | If both the Jacobi and Gauss-Seidel sequences converge for the solution of Ax=b, for any initial x(0), then which of the following is true about both the solutions? | | **Select correct option:** | |  | | |  |  | | --- | --- | |  |  | |  | correct | |  |  | |  |  | | | |

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Bottom of Form

**LATEST 9th Dec 2011 Paper:**

**Q=26** **Let w be the set of all vectors of the form ,where ‘ b’ and ‘c’ are arbitrary scalars.show that w is a subspace of R3.**



**SOLUTION:**

W is a subspace of R3 as



Reference to the scalars b and c “arbitrary” means that the scalars can be any real numbers.

**Q=25 compute AB using block multiplication ,where and**



**Q =24 let W be the set of all vectors of the form , where ‘a’ and ‘b’ are arbitrary scalars.find the vectors such that w= span () ……3 marks**



**Q=23 find the increase of the matrix. using the inversion** algorithm…..3marks



**Q=22 = determine whether the set v = {(x,y,z)| x,y,z R and x,y =11} is a subspace of R3 or not….2**



**Q=21 show that the following system of linear equations has unique solutions.**

**4x1 +3x2 = 4**

**5x1 +8x2 = 6**

Top of Form



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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Quiz Start Time: 11:11 PM** | |  |  |  | | --- | --- | --- | | Time Left | 9  sec(s) |  | | | | |  |  | | --- | --- | | **Question # 1 of 10 ( Start time: 11:11:37 PM )** | **Total Marks:** 1 | | Let t be any m x n matrix with orthonormal columns and v be any vector then ||t . v || = \_\_\_\_\_. | | | **Select correct option:** | | |  | | | |  |  | | --- | --- | |  |  | |  | Correct | |  |  | |  |  | | | | |

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| |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | If a square matrix has orthonormal columns, then it also has \_\_\_\_\_\_ rows. | | **Select correct option:** | |  | | |  |  | | --- | --- | |  | Correct | |  |  | | | |

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| If x is \_\_\_\_\_\_\_ to both u and v, then x must be orthogonal to u – v. |
| **Select correct option:** |
|  |
| |  |  | | --- | --- | |  | Correct | |  |  | |

|  |
| --- |
| If a \_\_\_\_\_ matrix has orthonormal columns, then it also has orthonormal rows. |
| **Select correct option:** |
|  |
| |  |  | | --- | --- | |  | Correct | |  |  | |  |  | |  |  | |

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| For any vectors u and v, the length of vector u – v will be || u – v ||. |
| **Select correct option:** |
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| |  |  | | --- | --- | |  |  | |  | Correct | |

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| |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | n x n matrix A is invertible if and only if \_\_\_\_\_\_\_\_\_\_\_ is not an eigen value of A. | | **Select correct option:** | |  | | |  |  | | --- | --- | |  | Correct | |  |  | |  |  | |  |  | | | |

1. If w is the orthogonal projection of a vector v in R^n onto a subspace W of

R^n then w is orthogonal to v

False

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2. Let W be a subspace of R^n and v be a vector in R^n. Among all vectors in W,

+

the vector closet to v is the orthogonal projection of v onto W

False

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3. The set of all vectors in R^n orthogonal to one fixed vector is a subspace

of R^n

True

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4. If W is a subspace of R^n, then W and W have no vectors in common

False

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5. If a square matrix has orthonormal columns, then it also has orthonormal rows

True

Bottom of Form