QUIZ MASTER

MTH501(13 TO 17)

100% correct solution.
For more information you can visit my channel and for
any type of help related to CS619 you can contact me.

Let T be a linear transformation and A be a standard matrix for T. Then, T is invertible if and only if A is a (an) _____ matrix.

Select the correct option

○	singular
●	invertible
○	column
○	row

Question # 2 of 10 (Start time: 10:39:32 AM, 07 December 2020)   Total Marks:

Let A and B be the square matrices. Then, A and B are invertible with $B = A^{-1}$ and $A = B^{-1}$ if and only if $AB = BA$ equals to a (an) _____ matrix.

Select the correct option   ⊙ **Reload Math Equations**

○	singular
○	square
⦿	identity
○	rectangular

Question # 3 of 10 (Start time: 10:39:48 AM, 07 December 2020)   **Total Marks: 1**

A partitioned square matrix 'A' is said to be _____ matrix if the matrices on the main diagonal are square and all matrices below the main diagonal are zero.

Select the correct option

- ⚪ null

- ⚪ diagonal-constant

- ⚪ block lower triangular

- 🔘 block upper triangular

Question # 4 of 10 (Start time: 10:40:06 AM, 07 December 2020)

The computational efficiency of the LU factorization depends on knowing _____ matrix (matrices).

Select the correct option

(a) lower triangular

(b) upper triangular

(c) diagonal

(d) both (a) and (b)

Non square matrices do not have inverse

Select the correct option

- ⦿ True

- ◯ False

Question # 6 of 10 (Start time: 10:40:36 AM, 07 December 2020)

Gauss-Seidel method is also termed as a method of

Select the correct option

	Elimination Method
○	

	False Position Method
○	

	Successive Displacement
●	

	Iteration Method
○	

Question # 7 of 10 (Start time: 10:40:52 AM, 07 December 2020)

The matrix of coefficients either have no solution or have infinite solution is system of equation are

Select the correct option

- (●) Linearly dependent

- (○) Linearly independent

- (○) Quadratic and independent

- (○) Quadratic and dependent

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Question # 8 of 10 (Start time: 10:41:11 AM, 07 December 2020)

A matrix in which each descending diagonal from left to right is constant is called a _____ matrix.

Select the correct option

- ● diagonal-constant
- ○ block lower triangular
- ○ block upper triangular
- ○ diagonal

Question # 9 of 10 (Start time: 10:41:27 AM, 07 December 2020)

A matrix can be subdivided into sub matrices in various ways by inserting lines between selected _____ and columns.

Select the correct option

○ elements

○ diagonals

◉ rows

○ blocks

Question # 10 of 10 (Start time: 10:41:43 AM, 07 December 2020)

In Jacobi's method, the diagonal entries of a matrix are _____.

Select the correct option

○	zero
○	all zero
○	any constant
●	all nonzero

2ⁿᵈ account

MTH501:Quiz-1

What is the maximum possible number of pivots in a 4x6 matrix ?

Select the correct option

- ● 4
- ○ 6
- ○ 8
- ○ 10

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Question # 2 of 10 (Start time: 05:35:52 PM, 07 December 2020)

What is the maximum possible number of pivots in a '3 by 3' matrix ?

Select the correct option

0

1

3

5

MTH501:Quiz-1

The inverse of a matrix exists if and only if it is a non-singular matrix

Select the correct option

●	True
○	False

Question # 4 of 10 (Start time: 05:36:22 PM, 07 December 2020)　　　　　　　**Total Marks: 1**

A partitioned matrix 'A' is said to be block diagonal if the matrices on the main diagonal are square and all other position matrices are _____.

Select the correct option

⦿	zero
○	unit
○	nonzero symmetric
○	nonzero skew symmetric

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Question # 5 of 10 (Start time: 05:36:40 PM, 07 December 2020)

What is the maximum possible number of pivots in a 6x6 matrix ?

Select the correct option

○ 0

○ 2

○ 4

◉ 6

Question # 6 of 10 (Start time: 05:36:52 PM, 07 December 2020)   **Total Marks: 1**

If A is a square matrix, then the Minor of entry ith row and jth column is to be the determinant of the sub matrix that remains when the ith row and jth column of A are:

Select the correct option

○ added

◉ deleted

○ multiplied

○ divided

Question # 7 of 10 (Start time: 05:37:09 PM, 07 December 2020)   **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 the correct option

○ All of its entries on the diagonal must be zero.

○ All of its entries below the diagonal must be zero.

◉ All of its entries above the diagonal must be zero.

○ All of its entries below and above the diagonal must be zero.

Question # 8 of 10 (Start time: 05:37:25 PM, 07 December 2020)

Consider an LU-factorization, the matrix L is _____ and is called a unit lower triangular matrix.

Select the correct option

- ⦿ invertible

- ◯ singular

- ◯ identity

- ◯ zero

Question # 9 of 10 (Start time: 05:37:40 PM, 07 December 2020)   **Total Marks**

A partitioned square matrix 'A' is said to be _____ matrix if the matrices on the main diagonal are square and all matrices above the main diagonal are zero.

Select the correct option

○	null
○	diagonal-constant
◉	block lower triangular
○	block upper triangular

MTH501:Quiz-1

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

Select the correct option

- ○ Null matrix

- ○ Rectangular matrix

- ○ Diagonally dominant matrix

- ● Strictly diagonally dominant matrix

3rd account

Question # 1 of 10 (Start time: 07:07:27 PM, 07 December 2020)   **Total Marks: 1**

If A is a square matrix, then the Minor of entry ith row and jth column is to be the determinant of the sub matrix that remains when the ith row and jth column of A are:

Select the correct option

- ○ added
- ◉ deleted
- ○ multiplied
- ○ divided

Question # 2 of 10 (Start time: 07:07:44 PM, 07 December 2020)

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

Select the correct option

○ Null matrix

○ Rectangular matrix

○ Diagonally dominant matrix

◉ Strictly diagonally dominant matrix

Question # 3 of 10 (Start time: 07:07:57 PM, 07 December 2020)   **Total Marks: 1**

If the absolute value of each diagonal entry in a square matrix exceeds the sum of the absolute values of the other entries in the same row, then which of the following is true for the matrix?

Select the correct option

○ It is a null matrix.

○ It is a singular matrix.

○ It is a diagonally dominant matrix.

● It is a strictly diagonally dominant matrix.

Question # 4 of 10 (Start time: 07:08:17 PM, 07 December 2020)   **Total**

A matrix can be subdivided into sub matrices in various ways by inserting lines between selected _____ and columns.

Select the correct option

○	elements
○	diagonals
◉	rows
○	blocks

Question # 5 of 10 (Start time: 07:08:31 PM, 07 December 2020)   Total Marks:

As soon as an approximate solution of a linear system is sufficiently accurate for practical work then which of the following is true for an iterative process?

Select the correct option

- ◉ The process may be stopped.

- ○ The process may be carried on.

- ○ The row-echelon method may be used.

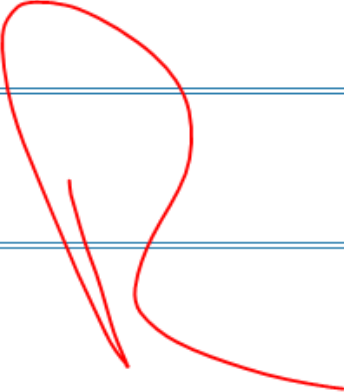- ○ The reduced row-echelon method may be used.

Question # 6 of 10 (Start time: 07:08:46 PM, 07 December 2020)   Tota

If A is invertible and b in R^n be any vector. Then, we must have a matrix $A^{-1}b$,which is a solution of _____.

Select the correct option

- ○ $A^{-1}x = b$
- ○ $A^2 x = b$
- ○ $A^t x = b$
- ● $Ax = b$

Question # 7 of 10 (Start time: 07:09:00 PM, 07 December 2020)

A partitioned matrix is a partition of a matrix into rectangular smaller matrices called _____.

Select the correct option

○ element

○ column

○ row

● blocks

Question # 8 of 10 (Start time: 07:09:18 PM, 07 December 2020)   Total Marks: 1

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 the correct option

○ No solution

◉ Unique solution

○ Different solutions

○ Infinitely many solutions

Question # 9 of 10 (Start time: 07:09:32 PM, 07 December 2020)

Gauss-Seidel method is similar to the

Select the correct option

○ Iteration Method

○ Newton Raphson Method

○ Regula-Falsi Method

◉ Jacobi Method

Question # 10 of 10 (Start time: 07:09:46 PM, 07 December 2020)

Gauss-Seidel method is also termed as a method of

Select the correct option

- ○ Elimination Method
- ○ False Position Method
- ● Successive Displacement
- ○ Iteration Method

4ᵗʰ account

Question # 1 of 10 (Start time: 03:56:34 PM, 08 December 2020)

The Jacobi's iteration converges if a square matrix A is diagonally dominant.

Select the correct option

- ◉ True
- ○ False

Question # 2 of 10 (Start time: 03:56:51 PM, 08 December 2020)   **Total Marks: 1**

Let 'Ax = 0' be a homogeneous linear system of 'n' equations and 'n' unknowns. Then, the coefficient matrix 'A' is invertible if and only if this system has _____ solution.

Select the correct option

○ no

● trivial

○ non-trivial

○ infinite many

Question # 3 of 10 (Start time: 03:57:11 PM, 08 December 2020)

A decomposition of a matrix as a product of two or more matrices is called the matrix _____.

Select the correct option

- ○ composition
- ⦿ factorization
- ○ multiplication
- ○ transformation

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Question # 4 of 10 (Start time: 03:57:24 PM, 08 December 2020)

Multiplication of a partitioned matrix by a scalar is also computed _____.

Select the correct option

○ row by row

○ column by column

○ diagonal by diagonal

◉ block by block

Question # 5 of 10 (Start time: 03:57:37 PM, 08 December 2020)

A matrix can be subdivided into sub matrices in various ways by inserting lines between selected _____ and columns.

Select the correct option

○ elements

○ diagonals

◉ rows

○ blocks

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Question # 6 of 10 (Start time: 03:57:52 PM, 08 December 2020)　　　　　　　**Total Marks: 1**

LU-decomposition converts the problem of solving the single system A x = b into the problem of solving the two systems, L y = b and U x = y, these systems are easy to solve because their co-efficient matrices are_____.

Select the correct option

- ○ diagonal
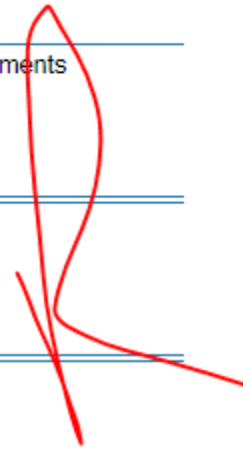- ◉ triangular
- ○ identity
- ○ symmetric

Question # 7 of 10 (Start time: 03:58:20 PM, 08 December 2020)

What is the limitation of Gauss-Seidel method?

Select the correct option

○ It cannot be used for the matrices with non-zero diagonal elements

○ It is more complex than Jacobi's method

◉ It doesn't guarantee convergence for each and every matrix

○ It is an iterative technique

Question # 8 of 10 (Start time: 03:58:32 PM, 08 December 2020)   **Total Mar**

Let A and B be the square matrices. Then, A and B are invertible with $B = A^{-1}$ and $A = B^{-1}$ if and only if $AB = BA$
equals to a (an) _____ matrix.

Select the correct option   🔄 **Reload Math Equati**

	singular
⃝	

	square
⃝	

	identity
🔘	

	rectangular
⃝	

Question # 9 of 10 (Start time: 03:58:50 PM, 08 December 2020)

The Gauss-Seidel method is applicable to symmetric ------------definite matrices

Select the correct option

- ⦿ Positive
- ○ Negative
- ○ Zero
- ○ Equal

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Question # 10 of 10 (Start time: 03:59:04 PM, 08 December 2020)

If two rows or columns of a square matrix are identical, then det (A)wil be _____.

Select the correct option

⦿ zero

○ non zero

○ one

○ positive

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5ᵗʰ account

Question # 1 of 10 (Start time: 04:43:25 PM, 08 December 2020)

In Jacobi's method, the rate of convergence is quite ---------- compared with other methods.

Select the correct option

○ Fast

◉ Slow

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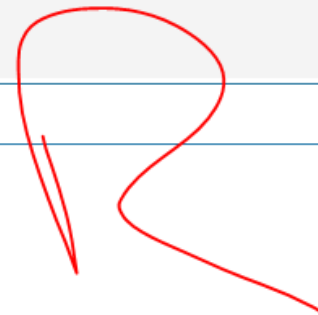**Question # 2 of 10 (Start time: 04:43:41 PM, 08 December 2020)**   **Total Marks:**

The value of the determinant of a square matrix remains unchanged if we multiply each element of a row or a column by some scalar.

Select the correct option

○ TRUE

◉ FALSE

Question # 3 of 10 (Start time: 04:43:55 PM, 08 December 2020)

Gauss-Seidel method is similar to the

Select the correct option

	Iteration Method ○
	Newton Raphson Method ○
	Regula-Falsi Method ○
	Jacobi Method ●

Question # 4 of 10 (Start time: 04:44:08 PM, 08 December 2020)

The computational efficiency of the LU factorization depends on knowing _____ matrix (matrices).

Select the correct option

(a) lower triangular

(b) upper triangular

(c) diagonal

(d) both (a) and (b)

Question # 5 of 10 (Start time: 04:44:25 PM, 08 December 2020)   Tot

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

Select the correct option

FALSE

○

TRUE

◉

Question # 6 of 10 (Start time: 04:44:40 PM, 08 December 2020)

The Invertible Matrix Theorem applies only to _____ matrices.

Select the correct option

○ rectangular

● square

○ identity

○ scalar

Question # 7 of 10 (Start time: 04:44:53 PM, 08 December 2020)

Consider an LU-factorization, the matrix L is _____ and is called a unit lower triangular matrix.

Select the correct option

○ invertible ●

○ singular

○ identity

○ zero

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Question # 8 of 10 (Start time: 04:45:11 PM, 08 December 2020)

If B is the matrix obtained by interchanging two rows or columns of the square matrix A, then det (B) = _____.

Select the correct option

- (•) - det(A)

- ( ) det(A)

- ( ) 1/det(A)

- ( ) -1/det(A)

Question # 9 of 10 (Start time: 04:45:26 PM, 08 December 2020)

The matrix of coefficients either have no solution or have infinite solution is system of equation are

Select the correct option

- ◉ Linearly dependent
- ○ Linearly independent
- ○ Quadratic and independent
- ○ Quadratic and dependent

Question # 10 of 10 (Start time: 04:45:47 PM, 08 December 2020)   **Total Marks: 1**

If A is a square matrix, then the Minor of entry ith row and jth column is to be the determinant of the sub matrix that remains when the ith row and jth column of A are:

Select the correct option

○ added

◉ deleted

○ multiplied

○ divided