MTH501 QUIZ(1)

Lecture: 10 to 16

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SQA ENGINEER:

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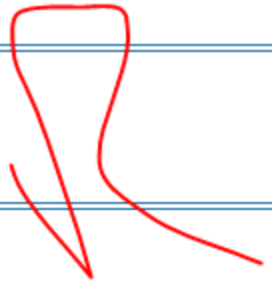
MTH501:Quiz No 1 Quiz Start Time: 11:27 AM

Question # 1 of 10 (Start time: 11:27:50 AM, 01 June 2021)

If a matrix equation is solved using the Jacobi's method, then which of the following is true about its main diagonal?

Select the correct option

- ○ It has two zeros along its main diagonal.
- ○ It has at least one zero along its main diagonal.
- ○ It has more than two zeros along its main diagonal.
- ● It has no zeros along its main diagonal.



MTH501:Quiz No 1 Quiz Start Time: 11:27 AM, 01 June 202

Question # 2 of 10 (Start time: 11:28:10 AM, 01 June 2021) 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 reduced row-echelon method may be used.
- ( ) The row-echelon method may be used.
- ( ) The process may be carried on.

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Question # 3 of 10 (Start time: 11:28:23 AM, 01 June 2021)

If determinant of a matrix is not zero then which of the following is true for that system?

Select the correct option

- (●) The inversion method applies.
- ( ) The inversion method fails.

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Question # 4 of 10 (Start time: 11:28:38 AM, 01 June 2021) **Total Marks:**

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

- nonzero skew symmetric
- nonzero symmetric
- unit
- zero

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Question # 5 of 10 (Start time: 11:28:54 AM, 01 June 2021)

If A is strictly diagonally dominant matrix, then which of the following is true for A?

Select the correct option

- ○ It is a singular matrix.
- ○ It is a rectangular matrix.
- ● It is an invertible matrix.
- ○ It is a null matrix.

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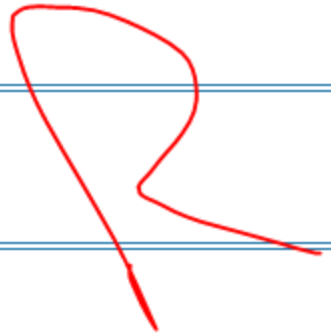
Question # 6 of 10 (Start time: 11:29:08 AM. 01 June 2021)

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

Select the correct option

- ○ elements
- ● rows
- ○ blocks
- ○ diagonals



MTH501:Quiz No 1 Quiz

Question # 7 of 10 (Start time: 11:29:29 AM, 01 June 2021)

The determinant of a triangular matrix is the sum of the entries of the main diagonal.

Select the correct option

- ○ True
- ● False

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Question # 8 of 10 (Start time: 11:29:46 AM, 01 June 2021)

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

Select the correct option

- 0
- 3
- 1
- 5

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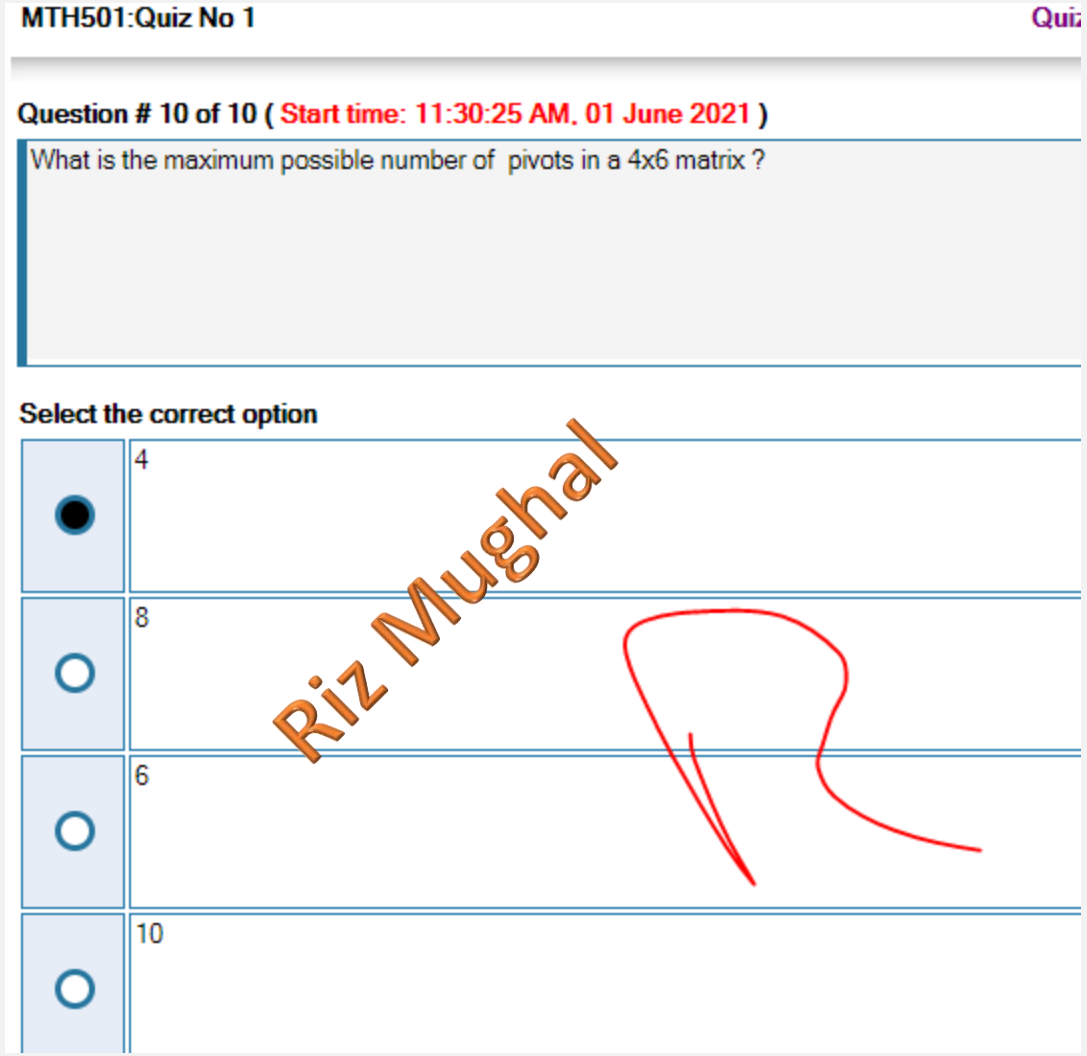
Question # 9 of 10 (Start time: 11:30:01 AM, 01 June 2021)

Let A be a square nxn matrix, then which of the following statement(s) is(are) equivalent?

Select the correct option

- (b) A is row equivalent to the nxn identity matrix.
- (c) A has n pivot positions.
- (d) Options (a to c). ●
- (a) A is an invertible matrix.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Question # 10 of 10 (Start time: 11:30:25 AM, 01 June 2021)
What is the maximum possible number of pivots in a 4x6 matrix ?
Select the correct option
4
8
6
10
Riz Mughal

2nd account

MTH501:Quiz No 1 Quiz Start Time: 12:42 PM, 01 June 2(

Question # 1 of 10 (Start time: 12:42:16 PM, 01 June 2021) Total Mark

In LU-decomposition, if A is the square matrix of order m, then the order of both lower and upper triangular matrices will be _____.

Select the correct option

Reload Math Equatio

- m^2
- $m+1$
- $2m$
- m

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Question # 2 of 10 (Start time: 12:42:32 PM, 01 June 2021)

A sufficient condition for the Jacobi's method to converge for the linear system Ax=b

Select the correct option

- (●) A is diagonally dominant
- ( ) A is non-singular
- ( ) None of the above
- ( ) A-I is diagonally dominant

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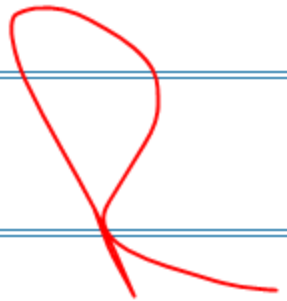
Question # 3 of 10 (Start time: 12:42:44 PM, 01 June 2021)

An m x m _____ matrix is only square matrix that is both unit lower triangular and upper triangular.

Select the correct option

- scalar
- null
- identity
- diagonal



MTH501:Quiz No 1 Quiz Start Time: 1

Question # 4 of 10 (Start time: 12:42:57 PM, 01 June 2021)

A homogeneous linear system always has the trivial solution; there are only two possibilities for its solutions:

Select the correct option

- ○ None of the above
- ● Both (a) and (b)
- ○ The system has only the trivial solution.
- ○ The system has infinitely many solutions in addition to the trivial solution.

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Question # 5 of 10 (Start time: 12:43:10 PM, 01 June 2021)

A null space is a vector space.

Select the correct option

- False
- True

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Question # 6 of 10 (Start time: 12:43:21 PM, 01 June 2021)

LU-factorization is used to solve systems of linear equations or calculate the _____.

Select the correct option

- row
- column
- diagonal
- determinant

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Question # 7 of 10 (Start time: 12:43:35 PM, 01 June 2021)

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

Select the correct option

- 1
- 3
- 0
- 5

MTH501:Quiz No 1 Quiz Start Time: 12:42 PM, 01 Jun

Question # 8 of 10 (Start time: 12:43:53 PM, 01 June 2021) Total M

Let A be the matrix of order 2X3 and B be the matrix of order 3X5,then which of the following is the order of the matrix AB?

Select the correct option

- 2X3
- 3X5
- 3X3
- 2x5

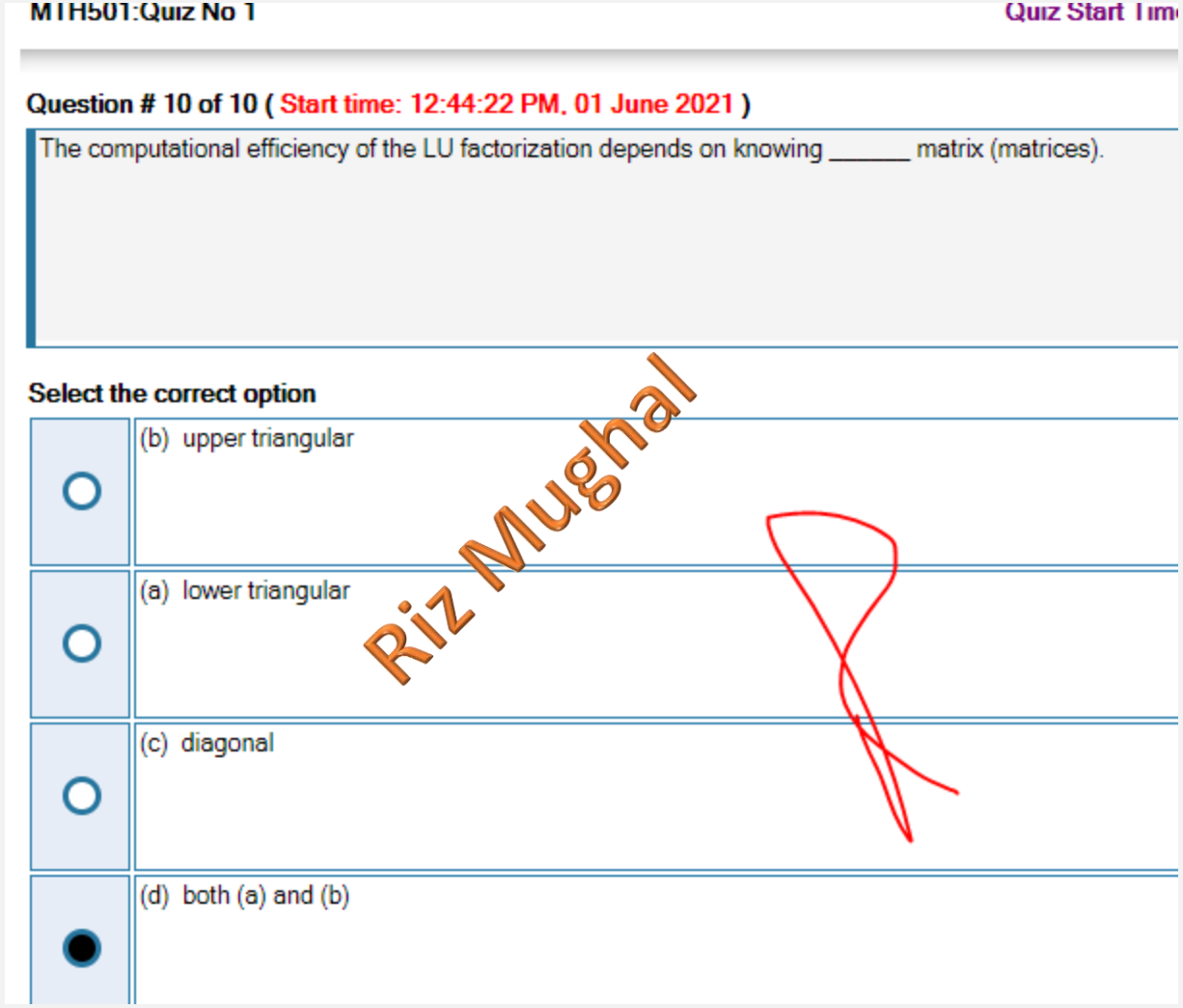
MTH501:Quiz No 1 **Quiz Start Time: 12:42 PM, 01 June 2021**

Question # 9 of 10 (Start time: 12:44:08 PM, 01 June 2021) **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

- symmetric
- identity
- diagonal
- triangular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Question # 10 of 10 (Start time: 12:44:22 PM, 01 June 2021)
The computational efficiency of the LU factorization depends on knowing _____ matrix (matrices).
Select the correct option
(b) upper triangular
(a) lower triangular
(c) diagonal
(d) both (a) and (b)
Riz Mughal

3rd account

MTH501:Quiz No 1 **Quiz Start Time: 01:08 PM, 01 June 2021**

Question # 1 of 10 (Start time: 01:08:26 PM, 01 June 2021) **Total Marks:** 1

In matrix factorization A=LU, where L is a lower triangular matrix with any _____ on the diagonal and U is an upper triangular matrix.

Select the correct option

- ○ fixed constant
- ● constant
- ○ variable
- ○ fixed variable

MTH501:Quiz No 1 Quiz Start Time: 01:08

Question # 2 of 10 (Start time: 01:08:44 PM, 01 June 2021)

Which one of the following is a null matrix?

Select the correct option

Reload

- ○ $\begin{pmatrix} 1 & 0 & 0 \end{pmatrix}$
- ● $\begin{pmatrix} 0 & 0 & 0 \end{pmatrix}$

MTH501:Quiz No 1 Quiz St

Question # 3 of 10 (Start time: 01:09:00 PM, 01 June 2021)

LU-factorization is used to solve systems of linear equations or calculate the _____.

Select the correct option

- row
- determinant
- diagonal
- column

MTH501:Quiz No 1 Quiz Start Time: 01:08 PM, 01 Ju

Question # 4 of 10 (Start time: 01:09:13 PM, 01 June 2021) Total

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

Reload Math Eq

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

MTH501:Quiz No 1 Quiz Start Time: 01:08 PM, 01 Jun

Question # 5 of 10 (Start time: 01:09:26 PM, 01 June 2021) Total M

Let $T : R^2 \to R^2$ be transformation $T(x_1, x_2) = (x, 0)$. The null space (or kernel) $N(T)$ of T is

Select the correct option

Reload Math Equ

- $(0, 1)$
- $(1, 0)$
- $(0, x_2)$ ●
- $(x_1, 0)$

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Question # 6 of 10 (Start time: 01:09:39 PM, 01 June 2021)

Let A be a square nxn matrix, then which of the following statement(s) is(are) equivalent?

Select the correct option

- (d) Options (a to c).
- (a) A is an invertible matrix.
- (b) A is row equivalent to the nxn identity matrix.
- (c) A has n pivot positions.

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Question # 7 of 10 (Start time: 01:09:52 PM, 01 June 2021)

If A is an invertible square matrix then

Select the correct option

○	$(A^T)^T = (A^{-1})^T$
●	$(A^T)^{-1} = (A^{-1})^T$
○	$(A^T)^{-1} = (A^{-1})^{-1}$
○	None of the above.

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Question # 8 of 10 (Start time: 01:10:04 PM, 01 June 2021)

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

Select the correct option

- ○ Rectangular matrix
- ○ Null matrix
- ○ Diagonally dominant matrix
- ● Strictly diagonally dominant matrix

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Question # 9 of 10 (Start time: 01:10:15 PM, 01 June 2021)

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

Select the correct option

- (●) block by block
- ( ) column by column
- ( ) diagonal by diagonal
- ( ) row by row

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Question # 10 of 10 (Start time: 01:10:25 PM, 01 June 2021)

Gauss-Seidel method is similar to the

Select the correct option

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

Thank you for watching ☺

Share with your fellows

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