Started on	Friday, 9 October 2020, 5:36 PM
State	Finished
Completed on	Friday, 9 October 2020, 6:10 PM
Time taken	33 mins 11 secs
Grade	**3.00** out of 7.00 (**43**%)

Question **1**

Correct

Mark 1.00 out of 1.00

Flag question

$$A := \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 1 & \frac{1}{2} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \quad B := \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 5 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

Select one:

- B is an elementary matrix
- A is a product of elementary matrices ✔
- e_3 is a row matrix with standard notation, then $2.e_3AB$ = [0 6 0 0]
- A is an elementary matrix

The correct answer is: A is a product of elementary matrices

Question **2**

Correct

Mark 1.00 out of 1.00

Flag question

Let A is not invertible matrix, then

Select one:

- There does not exist any non-zero matrix B such that AB = 0
- None of the other options. ✔
- There exist an elementary matrix EA is invertible.
- Ax = 0 has only zero solution

The correct answer is: None of the other options.

Question **3**

Incorrect

Mark 0.00 out of 1.00

Flag question

Consider a system of linear equations $Ax = b$, where

$$A := \begin{bmatrix} 2 & 3 & 4 \\ 2 & 2 & 4 \\ 1 & 2 & 2 \end{bmatrix}, b := \begin{bmatrix} b_1 \\ b_2 \\ b_3 \end{bmatrix}$$

(i) The system has only one solution when $2b_1 - b_2 - 2b_3 = 0$.

(ii)The system has a solution for each non-zero column matrix b.

(iii) The system does not have any solution for $2b_1 - b_2 - b_3\ 6 \neq 0$.

(iv) The system has innitely many solution when $b_1 = 1$; $b_2 = 2$; and $b_3 = 0$.

Select one:

- (ii) and (iv) are true
- (i) and (iv) are true ✖
- Only (iv) is true.
- Only (iii) is true

The correct answer is: Only (iv) is true.

Question **4**

Incorrect

Mark 0.00 out of 1.00

Flag question

$$(S.L.E{-}I)\begin{cases} x_1 - 2x_2 = 3 \\ 5x_1 + 3x_2 = 11 \\ 4x_1 + 5x_2 = 2 \\ 3x_1 + 7x_2 = 5 \end{cases} \quad (S.L.E{-}II)\begin{cases} x_1 - 2x_2 = 3 \\ 4x_1 + 5x_2 = 8 \\ 3x_1 + 7x_2 = 5 \end{cases} \quad (S.L.E{-}III)\begin{cases} 5x_1 + 3x \\ 6x_1 + x_2 \\ 2x_1 - 4x \end{cases}$$

Select one:

- (S.L.E-II) and (S.L.E-III) are not equivalent systems
- (S.L.E-I) and (S.L.E-II) are not equivalent systems
- (S.L.E-I) and (S.L.E-II) are equivalent systems ✖
- (S.L.E-III) and (S.L.E.-I) are equivalent systems

The correct answer is: (S.L.E-I) and (S.L.E-II) are not equivalent systems

Question **5**

Incorrect

Mark 0.00 out of 1.00

Flag question

Let A be a matrix of size 4x3 and B be a matrix of size 3x4, then

Select one:

- None of the other options
- For a non-zero column matrix b, Bx = b may not have a solution.
- Ax = 0 has infinitely may solutions
- AB is a product of elementary matrices ✖

The correct answer is: For a non-zero column matrix b, Bx = b may not have a solution.

Question **6**

Correct

Mark 1.00 out of 1.00

Flag question

Let A;B;C and D be square matrices of same size and AB = BC = CD = I, then

Select one:

- A = C and B = D ✔
- A = D
- $(A + B)^2 \neq A^2 + 2AB + B^2$
- A = C and C = D

The correct answer is: A = C and B = D

Question **7**

Incorrect

Mark 0.00 out of 1.00

Flag question

Suppose A,B and C are square matrices of same size such that AB = AC implies B = C, whenever

Select one:

- A is a matrix such that $Ae_1 = e_2$
- A is a matrix such that $Ae_1 = e_1$ ✖
- A is any upper-triangular matrix.
- $A^3 = I$.

The correct answer is: $A^3 = I$.

Finish review