



**FINAL EXAMINATION**  
**MARCH 2024**

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<b>COURSE TITLE</b>	<b>INTRODUCTION TO LINEAR ALGEBRA</b>
<b>COURSE CODE</b>	<b>EMAT3123</b>
<b>DATE/DAY</b>	<b>20 JUNE 2024 / THURSDAY</b>
<b>TIME/DURATION</b>	<b>09:00 AM - 11:00 AM / 02 Hour(s) 00 Minute(s)</b>

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**INSTRUCTIONS TO CANDIDATES :**

1. Please read the instruction under each section carefully.
2. Candidates are reminded not to bring into examination hall/room any form of written materials or electronic gadget except for stationery that is permitted by the Invigilator.
3. Students who are caught breaching the Examination Rules and Regulation will be charged with an academic dishonesty and if found guilty of the offence, the maximum penalty is expulsion from the University.

(This Question Paper consists of 2 Printed Pages including front page)

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SECTION A

(50 Marks)

There are THREE (3) questions in this section. Answer ALL questions in the answer booklet.

1.  $B = \begin{bmatrix} 1 & 2 & 5 \\ 3 & 5 & 9 \\ 1 & 1 & -2 \end{bmatrix}$

Find the inverse matrix above by using the Elementary Row Operations.

(20 Marks)

2. Find  $\begin{bmatrix} 1 & -1 & 1 \\ 0 & 2 & -1 \\ 2 & 3 & 0 \end{bmatrix} \begin{bmatrix} 3 & 3 & -1 \\ -2 & -2 & -1 \\ -4 & -5 & 2 \end{bmatrix}$ , hence solve the system of:

(15 Marks)

$$\begin{aligned} x - y + z &= 1 \\ 2y - z &= 4 \\ 2x + 3y &= 7 \end{aligned}$$

3.  $\begin{aligned} x - y + z &= 1 \\ -2y + z &= -1 \\ 2x + 3y &= 1 \end{aligned}$

Solve the equation by using the Cramer's Rule.

(15 Marks)

\*\*\* END OF QUESTION PAPER \*\*\*

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