University of Central Punjab

Faculty of Information Technology

and Computer Science

FALL 2024

Course Title: LINEAR ALGEBRA

Course Code: SESS2743

Submission Date 15 November

Assignment 2

Name: _____

Registration Number: _____

Section: _____

CLO #	Course Learning Outcome (CLO)	Taxonomy Level	Mapping to PLO
CLO 1	Students will be able to **apply** linear equations to model real-world problems and solve them using appropriate methods and derive matrices representing linear transformation.	**C3**	**PLO 2**

Submission Instructions ***(Please follow strictly)***

Assignment is h**andwritten.** It is **NOT TYPES IN WORD or any text editor**.

The Assignment is written on plain A4 size pages and stapled properly. (Do not submit in paper files).

All questions and pages are in order .

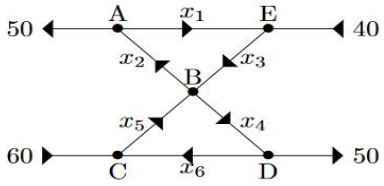
Follow the deadline. Finish your work one day before, so you could submit in time.

Late submission will result in 10% deduction in marks.

No request for late submissions will be considered after two working days of the deadline.

Question#1

For the network shown below, what are the minimum values of x_2, x_3, x_4, and x_5?



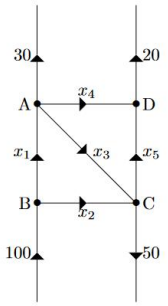
Question#2

Consider the street network shown below. Flow rates are in cars per minute.

(a) **Find** the general traffic pattern in the network.

(b) **Determine** the general traffic pattern with the road whose flow is x4 is closed.

(c) When this road is closed, what is the maximum value of x3?



Question#3

Find inverse of Matrix A.

$$\begin{matrix} -1 & 2 & -3 \\ 2 & 1 & 0 \\ 4 & -2 & 5 \end{matrix}$$

Note: For question 1 and 2 solve system by converting matrix into Reduced Row Echelon form.