



American International University- Bangladesh (AIUB)
Faculty of Engineering

Course Name:	Introduction to Electrical Circuits	Course Code:	EEE 2108
Semester:	Fall 2021-22	Total Marks:	10
Faculty:	Prof. Dr. Mohammad Abdul Mannan	Term	Mid

ASSIGNMENT 01 [MID-TERM]

Submission Date: October 08, 2021 [Uploaded: October 02, 2021]

Instruction Related to Used Variables Based on Student ID:

Note that this assignment uses the variables m_1 , m_2 , m_3 , m_4 , and m_5 , which are the five digits of middle of your student ID. For example, if your student ID is: 09-15985-3, then you must consider:

$$m_1=1; \quad m_2=5; \quad m_3=9; \quad m_4=8; \quad m_5=5$$

Write in the following Table the variables value according to your ID:

m_1	m_2	m_3	m_4	m_5

General Instruction:

1. Solve the problem to white sheets by your handwritten.
2. Write your **Name, Student ID, Section, Page Number** and value of m_5 on the top of first page.
3. In top of other pages write the **Page Number**.
4. Take picture of your solution for each page individually.
5. **Insert the picture in a word file.**
6. Make word file into PDF format file.
7. Submit it in VUES.
8. **For each day delay 1 marks will be reduced.**
9. **Picture format file submission will not be considered**

Problem 01: For the network of Figure 01:

[5 Marks]

a. Find the currents I , I_1 , I_2 , I_6 and I_8 .

b. Find the voltages V_2 , V_7 , V_8 and V_9 .

c. Find the power delivered to the $16\text{ k}\Omega$, $9\text{ k}\Omega$, and $5.1\text{ k}\Omega$.

Hints: According to your ID, write $m_5 = \underline{\hspace{2cm}}$ then calculate the value of $R_1 = 5.2 + 2 \times m_5 = \underline{\hspace{2cm}}$.

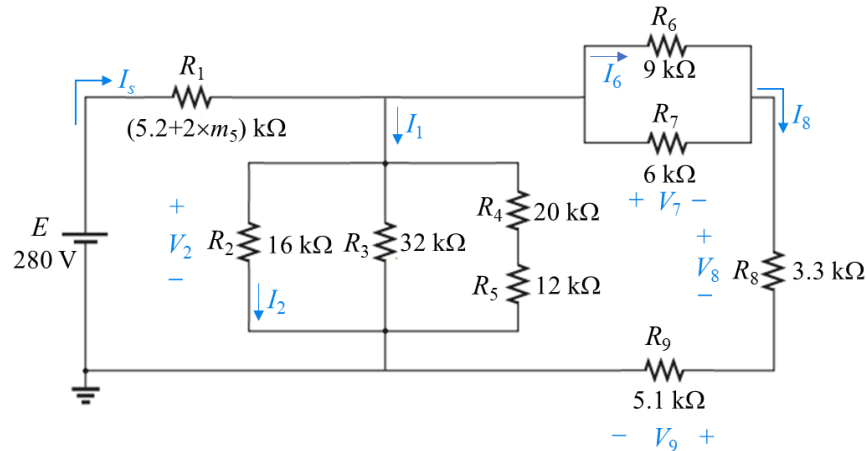


Figure 01: Problem 01

Problem 02: For the network of Figure 02:

[2.5 Marks]

a. Write the two loop equations.

b. By solving the loop equations, find the value of currents I_1 , I_2 and I_3 .

Hints: According to your ID, write $m_4 = \underline{\hspace{2cm}}$ then calculate:

$$R_1 = 2(1+m_4) = \underline{\hspace{2cm}} \Omega$$

$$R_2 = R_4 = 3(1+m_4) = \underline{\hspace{2cm}} \Omega$$

$$R_3 = 5(1+m_4) = \underline{\hspace{2cm}} \Omega$$

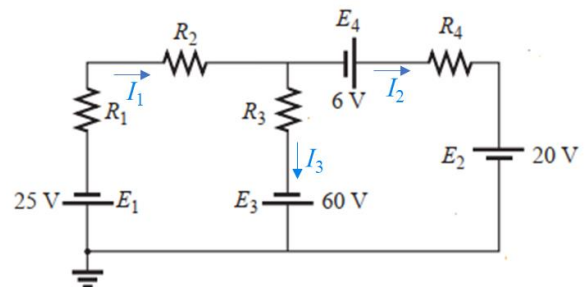


Figure 02: Problem 02

Problem 03: For the network of Figure 03:

[2.5 Marks]

a. Write the nodal equations.

b. By solving the nodal equations, find the value of voltages of nodes and the currents I_3 .

Hints: According to your ID, write $m_5 = \underline{\hspace{2cm}}$ then calculate:

$$R_1 = 4(1+m_5) = \underline{\hspace{2cm}} \Omega$$

$$R_2 = R_4 = 8(1+m_5) = \underline{\hspace{2cm}} \Omega$$

$$R_3 = 16(1+m_5) = \underline{\hspace{2cm}} \Omega$$

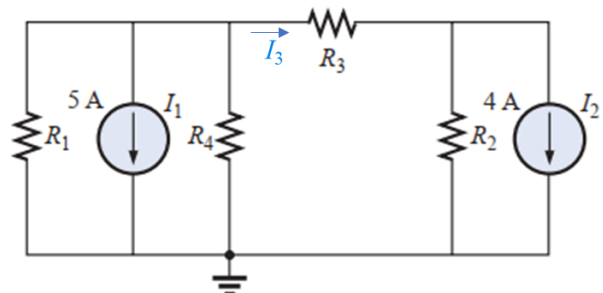


Figure 03: Problem 03

Good Luck