



বাংলাদেশ আর্মি ইন্টারন্যাশনাল ইউনিভার্সিটি অব সায়েন্স এন্ড টেকনোলজি, কুমিল্লা
 BANGLADESH ARMY INTERNATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY (BAIUST), CUMILLA

Mid Term Examination, Fall 2025

Department of Computer Science and Engineering

Level-1 Term-I

Course Code: EEE-111

Course Title: Electrical Circuit Analysis

Credit Hour: 03

Exam Duration: 1 Hour 30 Minutes

Full Marks: 90

325

Notes:

- Figure on the right of each question indicates the marks for the respective question.
- Answer all the **THREE** questions.
- Course Learning Outcomes are
 - CO1** Explain different circuit elements and electrical circuitries characteristics.
 - CO2** Interpret simplification of complex circuit and solving circuit by applying different circuit theorems.
 - CO3** Apply basic circuit principles to the analysis and design of DC and AC electrical circuits.
 - CO4** Able to understand the current voltage relation of circuits for different configurations and reproduce knowledge of AC power to analyze real life power consumptions of transmission lines.

- Explain KCL and KVL with example. [CO1→C2] [15]
 - Explain passive sign convention with proper figure. [CO1→C2] [10]
 - Explain Ohm's Law. [CO1→C2] [05]
- From Figure-2(a), calculate R_{ab} and i . [CO3→C3] [20]

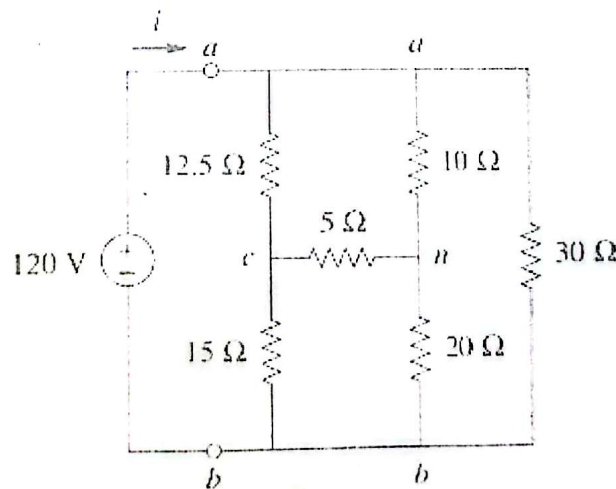


Figure-2(a)

b. Calculate v_o and i_o in the circuit of Figure-2(b). [CO3→C3]

[10]

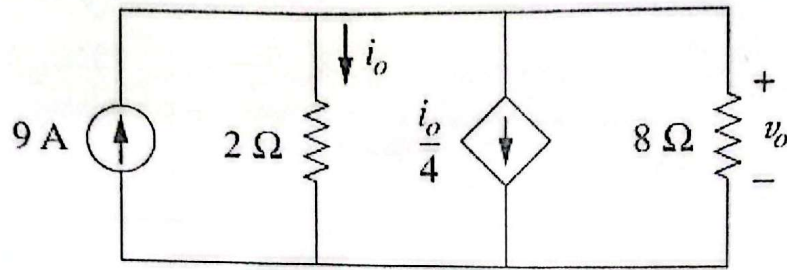


Figure-2(b)

3. a. Answer any **one** question only from this:

[15]

(i) For the circuit shown in Figure-3(a)-(i), find the node voltages v_1 and v_2 . [CO3→C3]

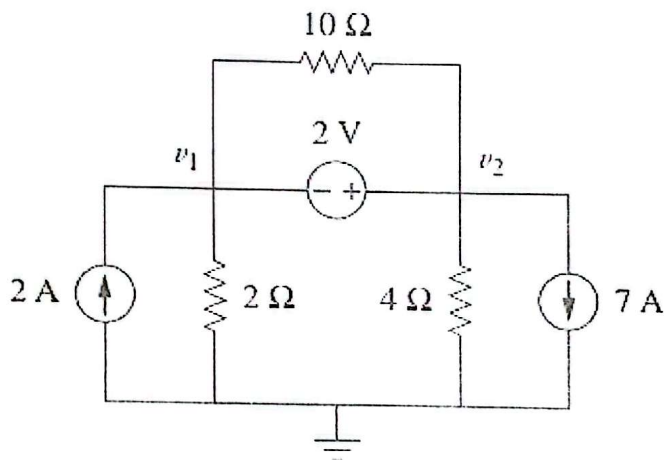


Figure-3(a)-(i)

OR

(ii) Determine the voltages at nodes 1, 2, and 3 in Figure-3(a)-(ii). [CO3→C3]

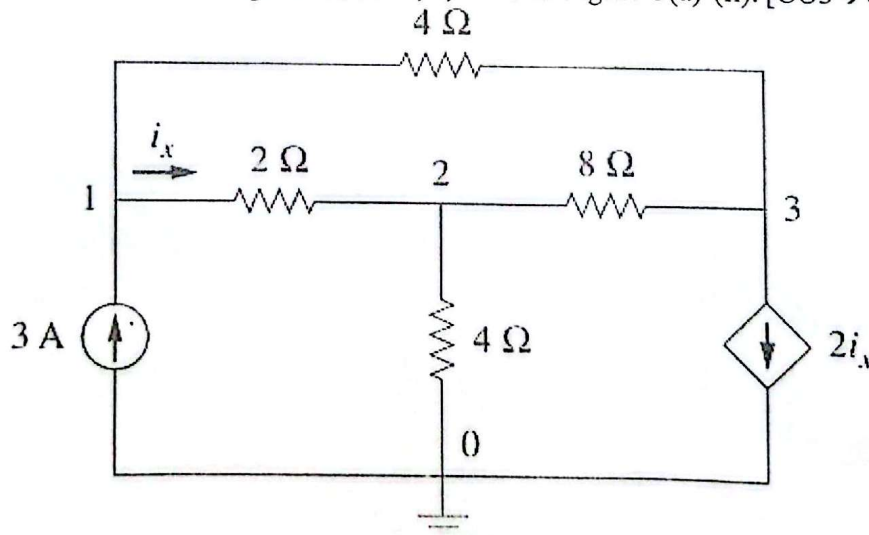


Figure-3(a)-(ii)

- b. Answer any **one** question only from this: [15]
 (i) Use mesh analysis to find the current I_o in the circuit of Figure-3(b)-(i).
 [CO3→C3]

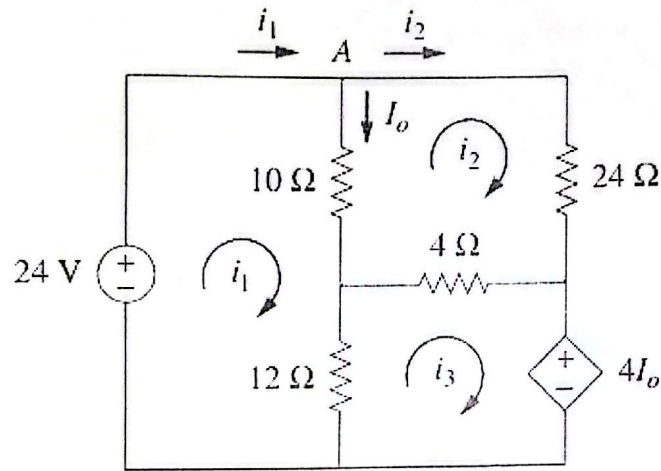


Figure-3(b)-(i)

OR

- (ii) Use mesh analysis to determine i_1 , i_2 and i_3 in Figure-3(b)-(ii). [CO3→C3]

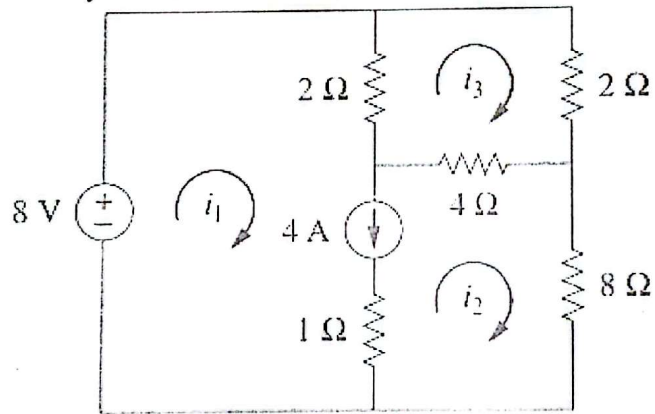


Figure-3(b)-(ii)

$V \propto i$
 $V = iR$

