



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

**Mid Term Examination, Spring 2025**  
 Department of Computer Science and Engineering  
 Level-I Term-I  
 Course Code: EEE-111  
 Course Title: Electrical Circuit Analysis  
 Credit Hour: 03  
 Exam Duration: 1 Hour 30 Minutes  
 Full Marks: 90

**Notes:**

- a. Figure on the right of each question indicates the marks for the respective question.
- b. Answer all the **THREE** questions.
- c. 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.

- 1. a. Explain voltage divider and current divider rule with example. CO1→C2 [15]
- b. Calculate the power supplied or absorbed by each element in Fig. A CO3→C3 [15]

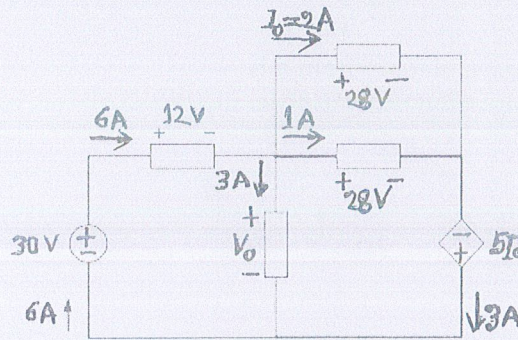


Fig. A

- 2. a. For the circuit in Fig. B, use the superposition theorem to find  $i$ . CO2→C3 [20]

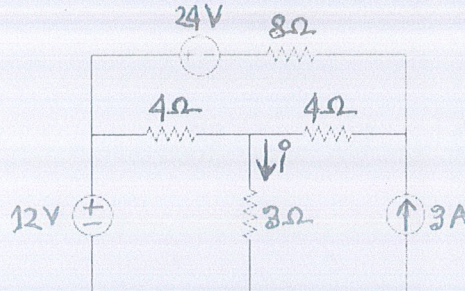


Fig. B

b. Answer any **one** question only from this:

CO3→C3 [10]

i. Determine  $v_o$  in the circuit in Fig. C.

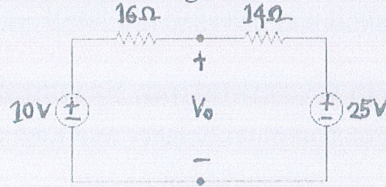


Fig. C

Or,

ii. Find  $v_x$  in the circuit of Fig. D.

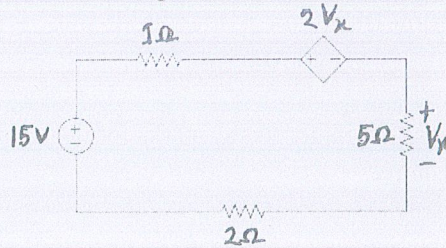


Fig. D

3. a. From in Fig. E, find  $R_{ab}$  and  $i$ .

CO2→C3 [15]

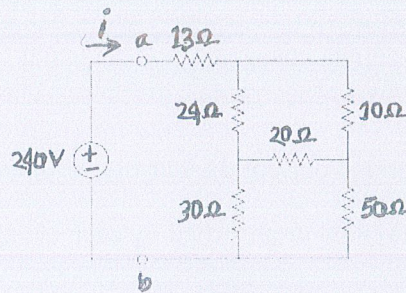


Fig. E

b. Answer any **one** question only from this:

CO3→C3 [15]

i. Find  $v$  and  $i$  using nodal analysis from Fig. F.

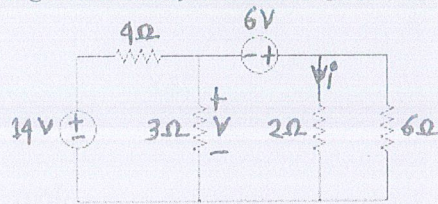


Fig. F

Or,

ii. Use mesh analysis to find the mesh current in the circuit of Fig. G

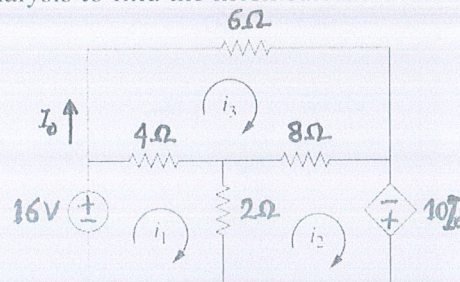


Fig. G