

NATIONAL UNIVERSITY OF SINGAPORE

Mid-term Test 1 for

(Semester II: AY2012/13)

CG1108 – Electrical Engineering

16 Feb 2013 - Time Allowed: 1 Hour

WRITE YOUR MATRICULATION NUMBER HERE: _____

INSTRUCTIONS TO CANDIDATES:

1. This paper contains FIVE (5) questions and comprises EIGHT (8) pages.
2. Answer all questions.
3. This is a **closed book** examination.
4. You can use **Pencil** to write your answers.

Q1. Determine the **currents** shown in the circuit of Figure Q1.

[10 marks]

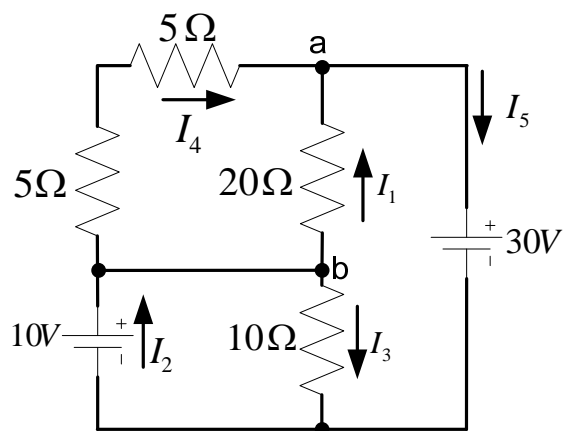


Figure Q1

Q2. Use **Mesh Current Analysis** to find the **power associated with the 2A current source** in the circuit in Figure Q2. Is the power **delivered or absorbed** by the current source?

[10 marks]

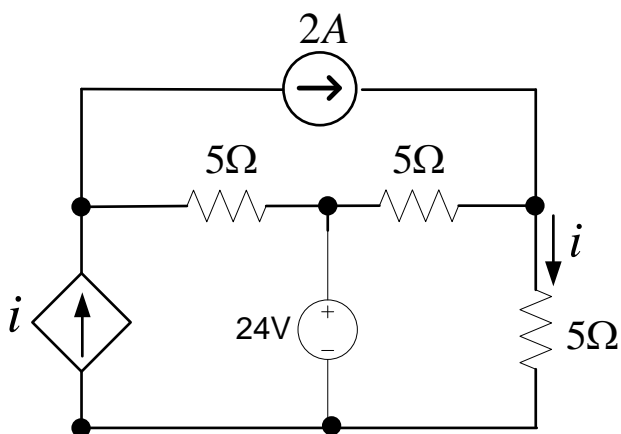


Figure Q2

Q3. Find the **Thevenin's equivalent** between points **a** and **b** in the circuit of Figure Q3.

[10 marks]

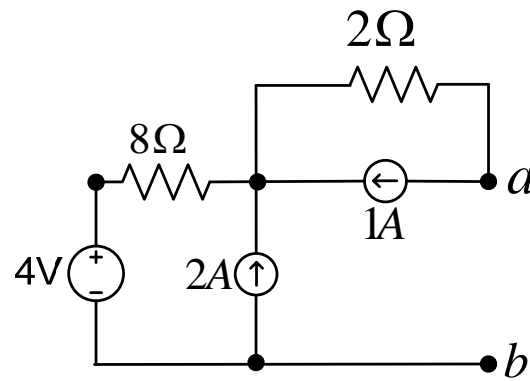


Figure Q3

Q4. Use **Node Voltage Analysis** method to find current i in circuit shown in Figure Q4.

[10 marks]

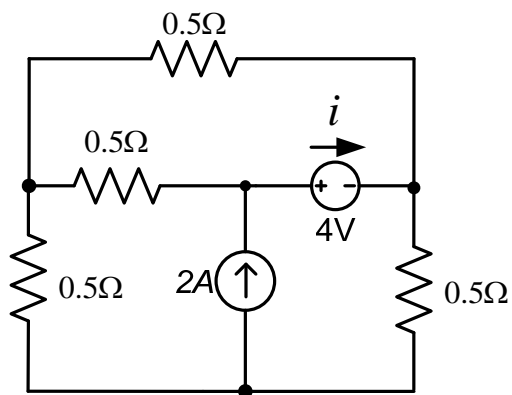


Figure Q4

Q5. For the circuit given in Figure Q5, find **Norton's equivalent** for the circuit between nodes **a** and **b**.

[10 marks]

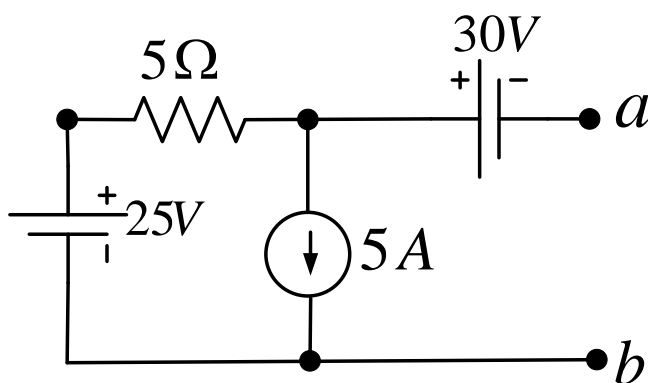


Figure Q5

END OF PAPER