



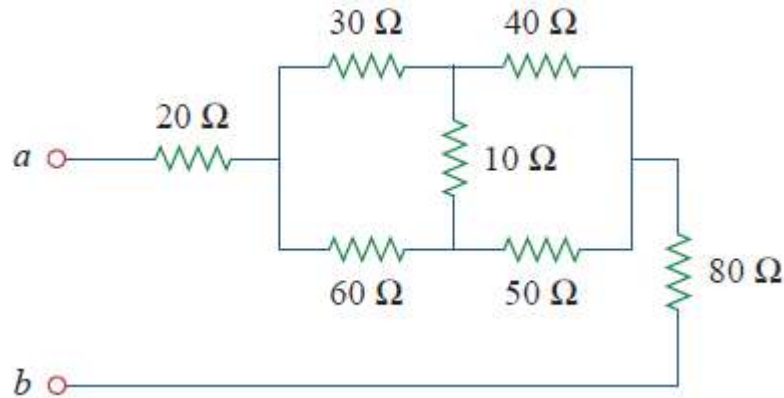
**United International University (UIU)**  
Dept. of Computer Science & Engineering (CSE)  
**Midterm Exam : Trimester: Summer - 2017**

Course: CSE 113 Electrical Circuits,  
Marks: 30, Time: 1 hour 45 minutes

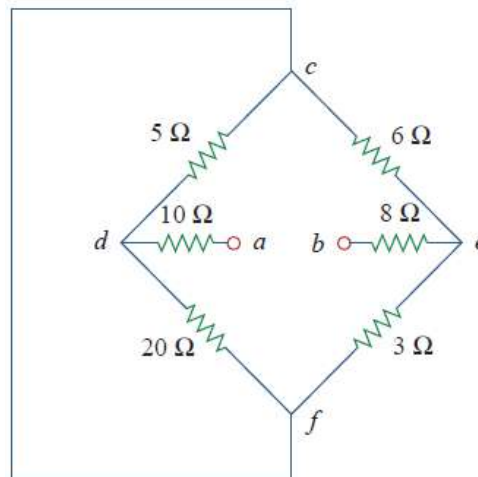
Figures in the right-hand margin indicate full marks.  
***Answer Any Three out of the Four Question Sets***

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1. a) Using Wye-Delta transformation find equivalent resistance between terminals a-b in the figure below: 6

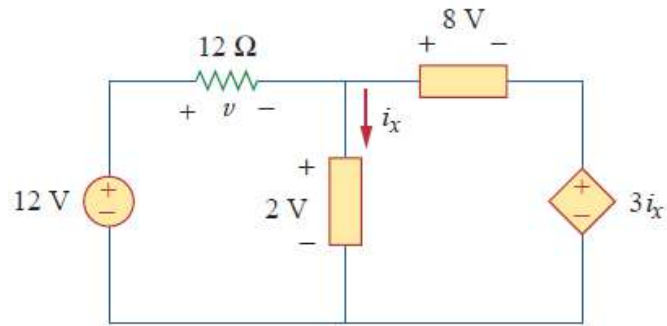


- b) Obtain equivalent resistance at terminals a-b from the following circuit. 4



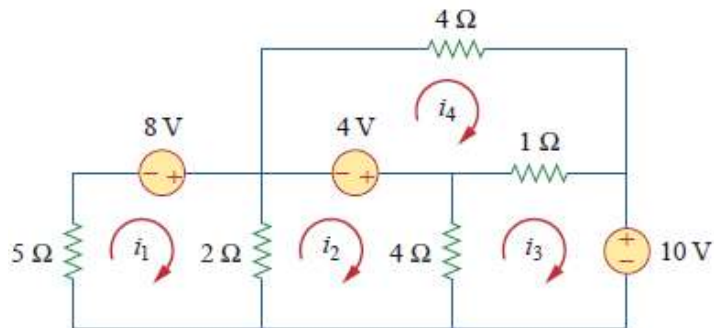
2. a) Calculate  $v$  and  $i_x$  from the circuit below.

4



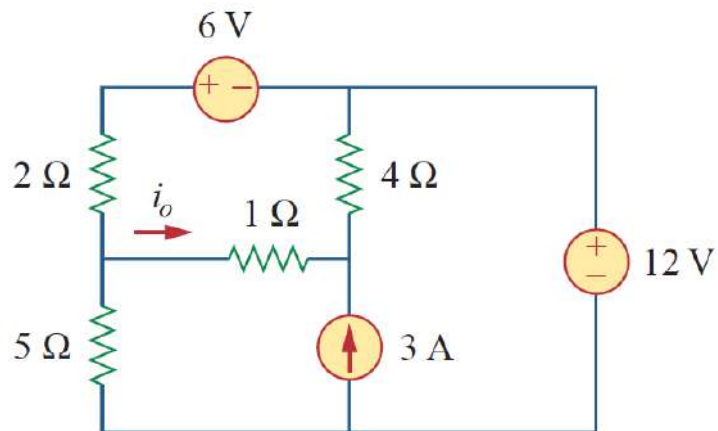
- b) Find mesh currents in the following circuit.

6



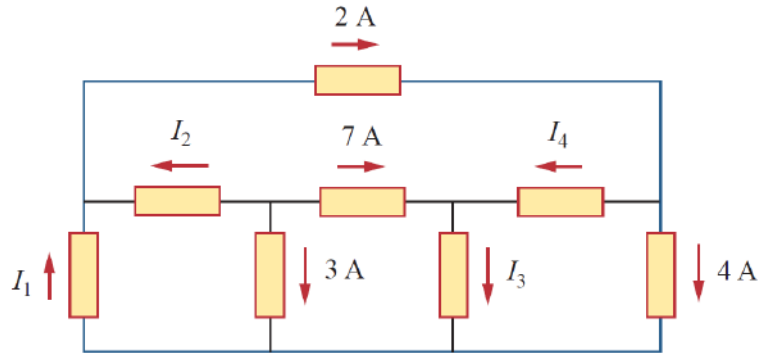
3. a) Using Nodal analysis find the value of  $I_0$  in the following circuit.

6



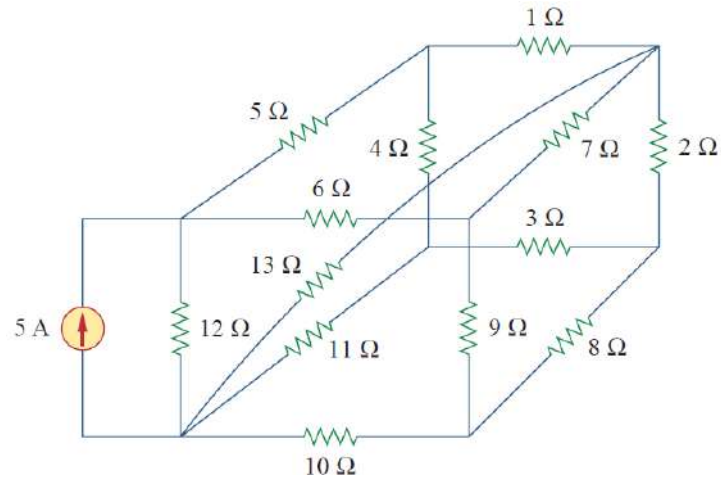
b) Calculate  $I_1$ ,  $I_2$ ,  $I_3$  and  $I_4$  from the circuit below.

4



4. a) Calculate the number of branches, loops and point out the nodes of the following circuit. Also, verify your answer.

4



b) Suppose  $R_L = 5\ \Omega$ . Now calculate current through terminal a to b using superposition theorem.

6

