**EAST WEST UNIVERSITY**
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Mid Term 1, Summer 2021

Course:	**CSE 109/209 – Electrical Circuits, Section-5**
Instructor:	**SHK, Senior Lecturer, CSE Department**
Full Marks:	**20**
Time:	**1 Hour and 30 Minutes [Including submission time]**

Note: There are FIVE questions, answer ALL of them. Course outcomes (CO) and marks of each question are mentioned at the right margin.

1. **Estimate** the power absorbed or supplied by all the circuit elements from the figure given below,

[CO1, Mark: 3]
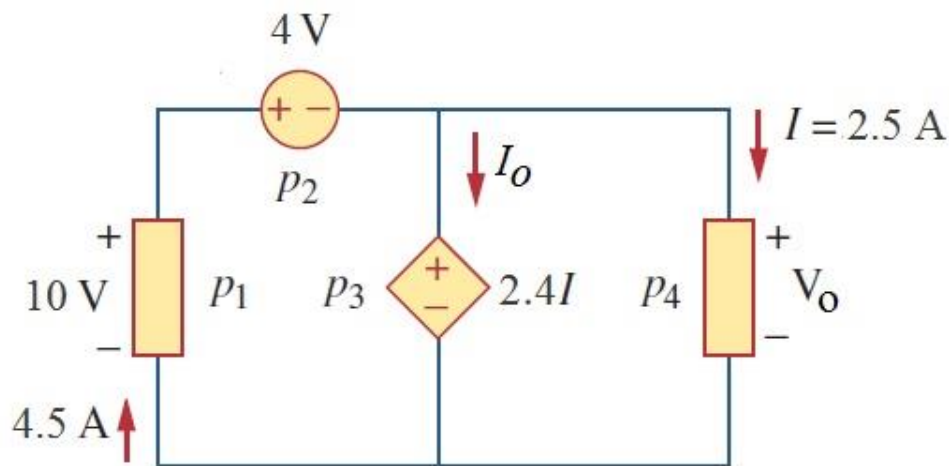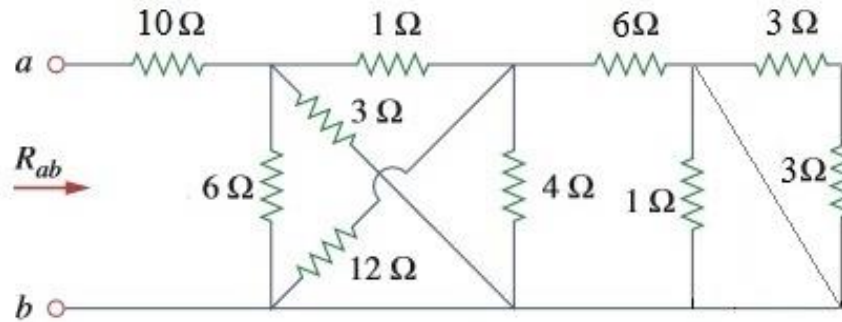

2. From the figure given below,

[CO1, Mark: 4]
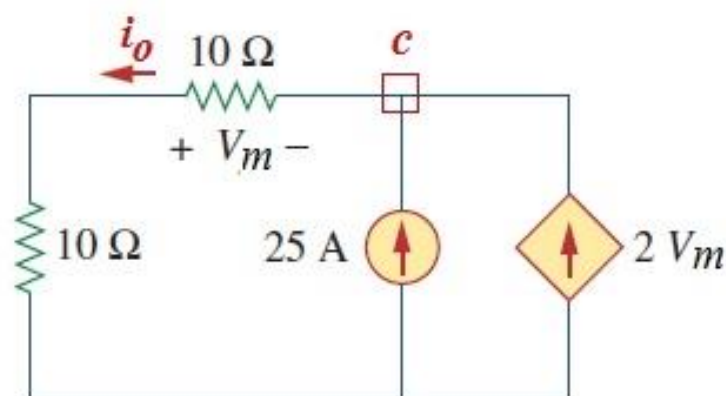
   a) **Find** V_m and i_o .
   b) Also, **verify** Kirchhoff's Current Law (KCL) at node c.

[Note that, to solve this circuit **you cannot use** advance analysis techniques like Nodal Analysis. You have to use the **Basic Laws** for analysis!]

3. **Determine** R_{ab} from the circuit given below. [CO1, Mark: 4]

4. Analyze the bridge network circuit given below using **wye-delta** transformation technique and find the followings: [CO1, Mark: 4]

   a) **Find** the total current i and the voltage V_{R4}(voltage across 300Ω resistor).
   b) **Find** the total current i and the voltage V_{R5}(voltage across 250Ω resistor).

   [**Note that, if the last digit of your student ID is even, then solve a, otherwise solve b**].
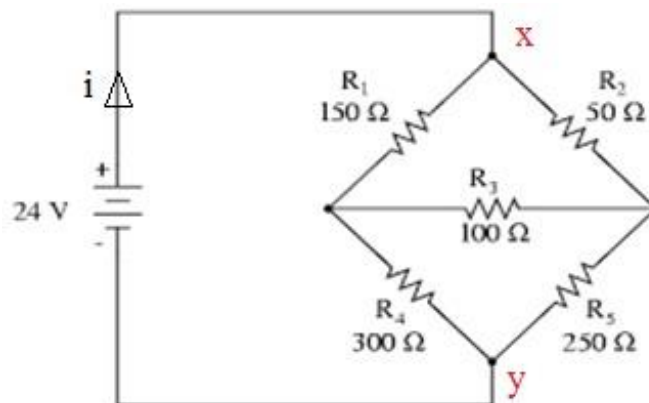
5. **Determine** the labeled node voltages v_1, v_2 and v_3 using nodal analysis from the following circuit [Use Cramer's rule to analyze]. [CO2, Mark: 5]