

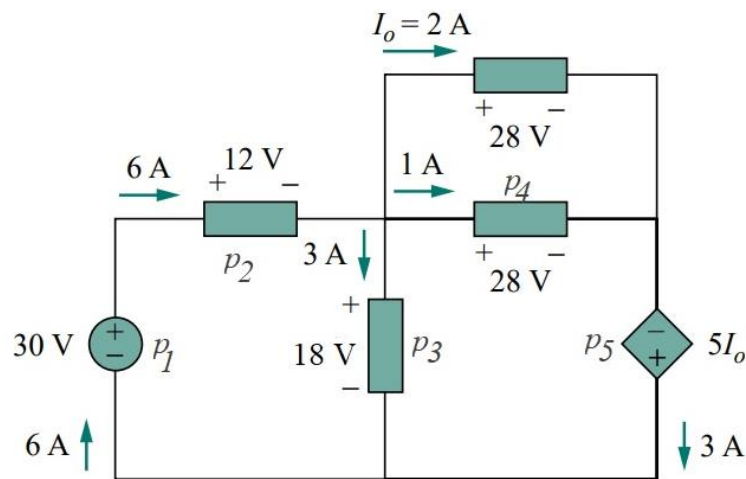
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Mid Term 1, Fall 2021

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.

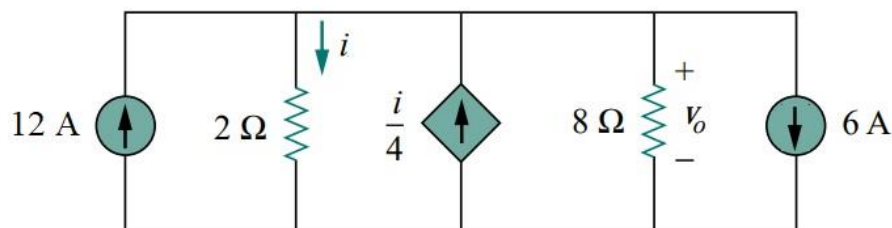
1. **Find** the powers p_1, p_2, p_3, p_4 and p_5 (absorbed or supplied) by the corresponding elements from the figure given below,

[CO1,C2
Mark: 3]



2. From the figure given below,

[CO1,C3
Mark: 4]

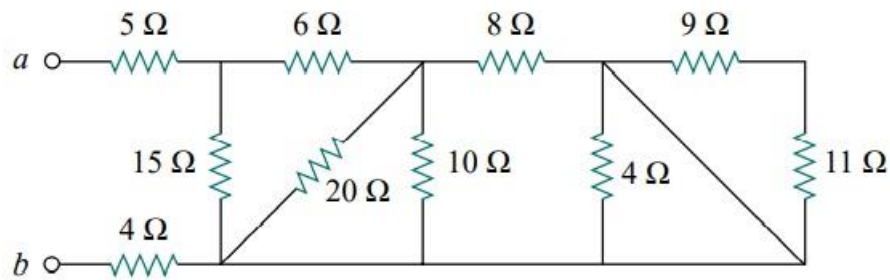


Find V_O and i .

[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.

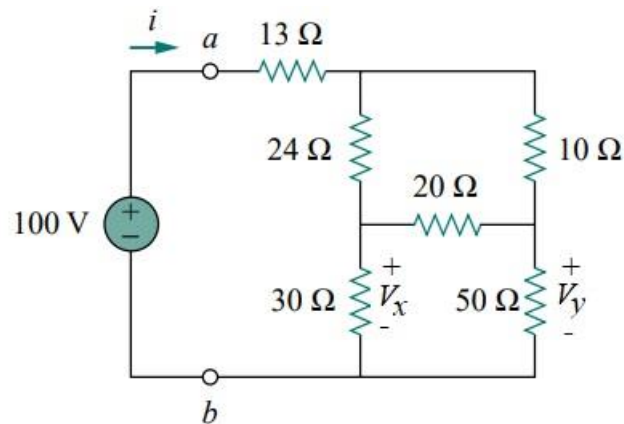
[CO1,C2
Mark: 3]



4. From the figure below, use wye-delta transformation technique to find
 a) the total current i and the voltage V_x from the circuit given below.
 b) the total current i and the voltage V_y from the circuit given below.

[CO1,C3
Mark: 4]

[Note that, if the last digit of your student ID is even, then solve a, otherwise solve b].



5. Determine V and i using nodal analysis from the following circuit [Use Cramer's rule to analyze and find the labeled node voltages V_1 and V_2 , also show the analysis].

[CO2,C4
Mark: 6]

