

大同大學 108 學年度(寒)轉學入學考試試題

考試科目：電路學

系別：電機工程學系

第 1/2 頁

註：本次考試 不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器

1. (10%) In the electric circuit, it includes the source and load elements. The electric power delivers to each element. Find the power absorbed by each elements in Figure 1.

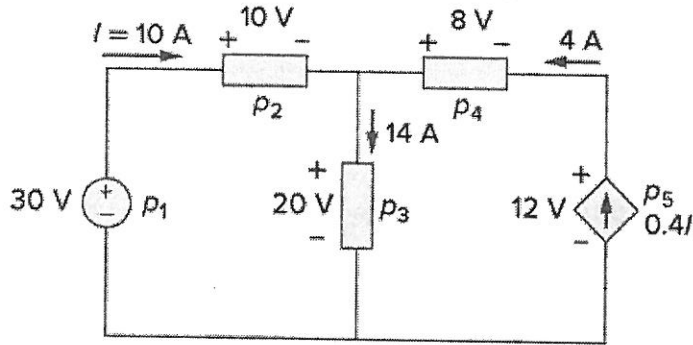


Figure 1. For problem 1..

2. (10%) Calculate V_0 and I_0 in the circuit of Figure 2.

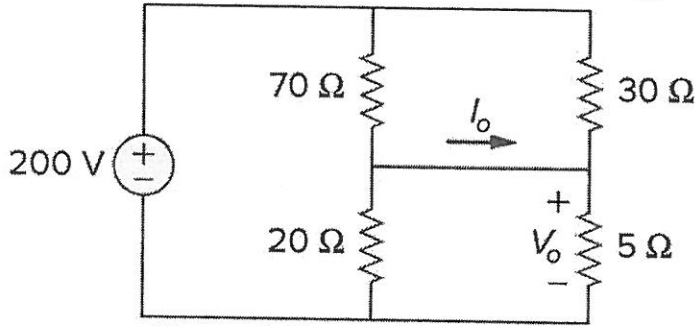
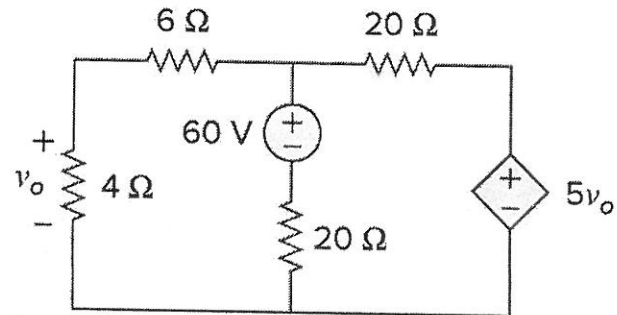
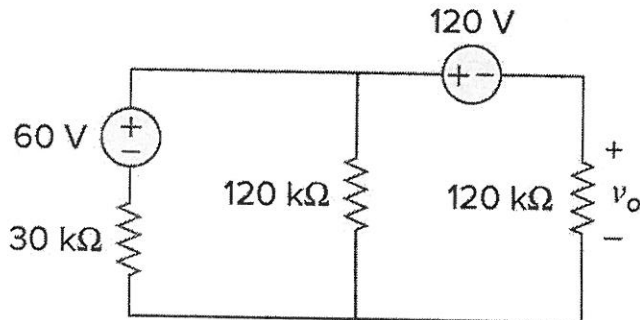


Figure 2. For problem 2

3. (15%) Find V_0 in the circuit of Figures 3(a) and 3(b).



Figures 3(a) and 3(b) for problem 3.

4. (15%) The variable resistor R in Figure 4 is adjusted until it absorbs the maximum power from the circuit.
 (a) Calculate the value of R for maximum power. (b) Determine the maximum power absorbed by R .

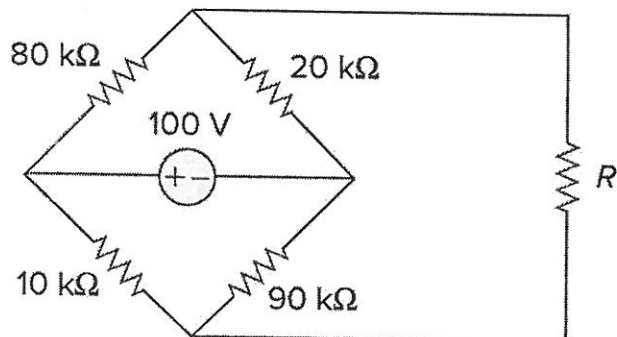


Figure 4. For problem 4.

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5. (20%) Find the Thevenin and Norton equivalent at terminals $a-b$ of the circuit shown in Figure 5.

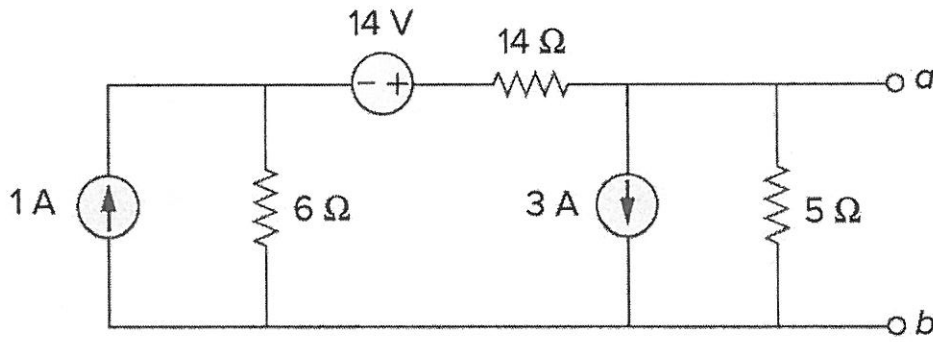


Figure 5. For problem 5.

6. (15%) Find v_C , i_L , and the energy stored in the capacitor and inductor in the circuit of Figure 6 under DC conditions.

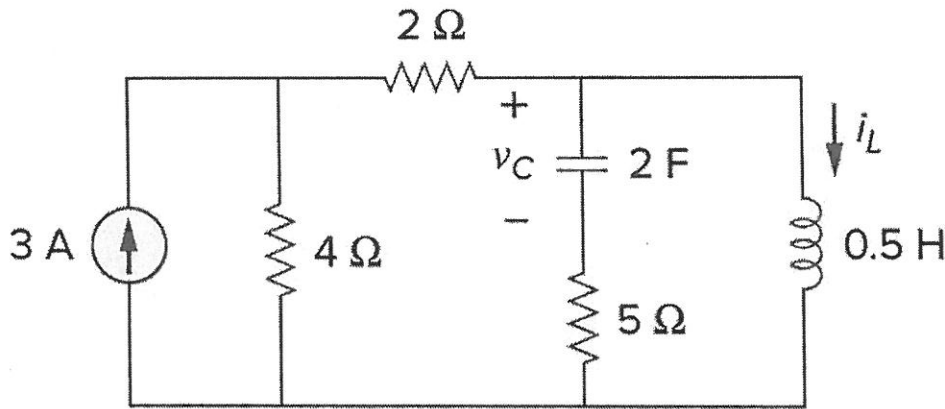


Figure 6. For problem 6.

7. (15%) Write down the definition of (a) voltage, (b) current, and (c) the first-order and second-order electric circuits.