Issue Date: 9th March, 2020 Due by: 16th March, 2020 5:00 PM

ECE113 Basic Electronics
Assignment 2

1) All Questions are compulsory.

2) Please use notations appropriately.

3) Maximum Marks:20 (4 marks each)

4) All the students are requested to submit hard copies of their assignments as per the deadline.

5) You can deposit your assignments in the respective boxes for each section (read the overleaf on each box carefully) kept near the Academic Section 2nd Floor A-wing - Old Academic Building.
Please note

a) You must staple the assignment properly.

b) Mention your Name, Roll no, Section and Group clearly on each sheet of the assignment. Specify sheet number on the top of each sheet.

c) Use A4 size sheets only (ruled or blank). Do not submit notebooks/notepads.

——-Questions——

1. Find the Norton equivalent at terminals a-b of the circuit shown in figure below.

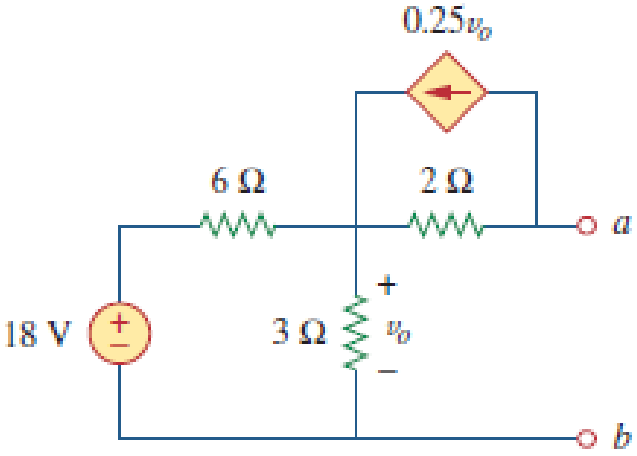

Figure 1:

2. For the circuit shown in figure below, what resistor to be connected across terminals a-b that will absorb maximum power from the circuit? What will be that power?

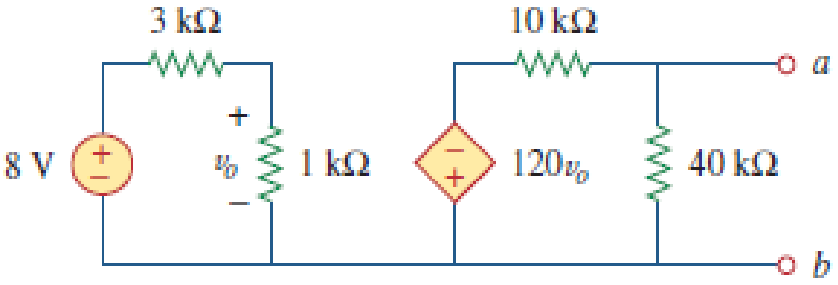

Figure 2.

3. Consider the circuit given below, determine

(a) $i_C(0^-)$, (b) $i_L(0^-)$, (c) $i_R(0^-)$, (d) $v_C(0^-)$, (e) $i_C(0^+)$, (f) $i_L(0^+)$, (g) $i_R(0^+)$, and (h) $v_C(0^+)$.

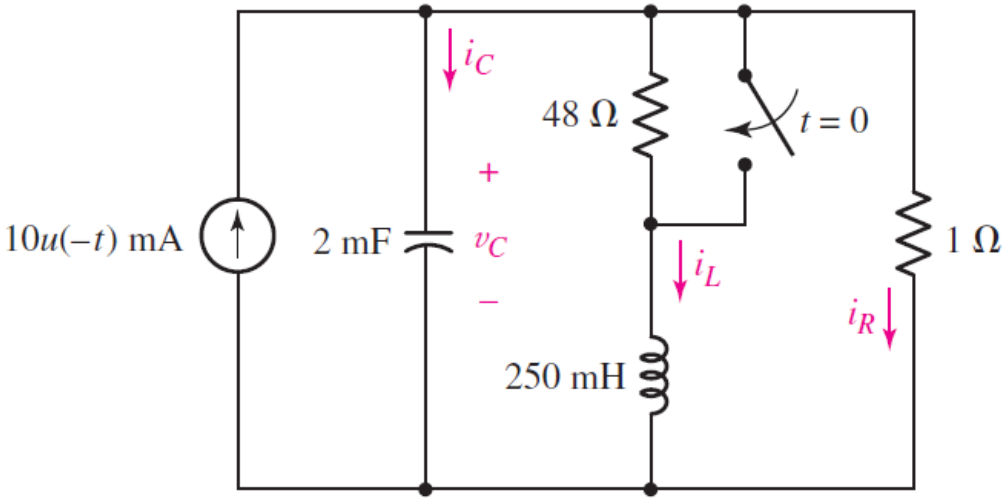

Figure 3:

4. Consider the circuit given below, the two resistor values are R1 = 0.752 ohms and R2 = 1.268 ohms, respectively. Obtain an expression for the energy stored in the capacitor, valid for all t>0

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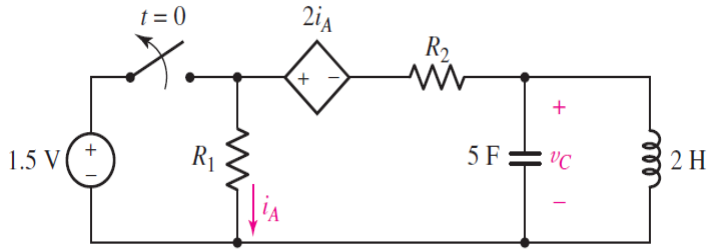

Figure 4:

5. After being open for a day, the switch in the circuit of figure below is closed at t=0. Find the differential equation describing i(t), t > 0.

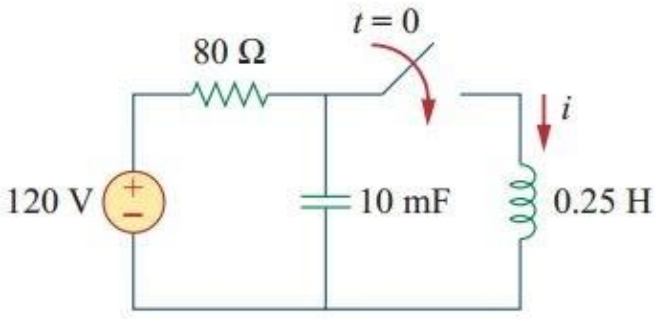

Figure 5: