Course No: EQUP 2307
Course Title: Electric Circuits 1
Date: 14/01/2018
No. of Questions: (6)
Time: 2hours
Using Calculator (Yes)

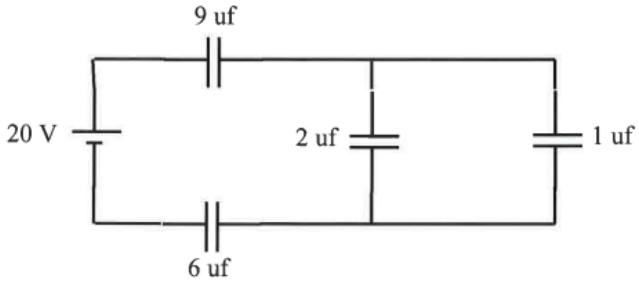
University of Palestine

Final Exam
1st. 2018-2017
Total Grade: 50

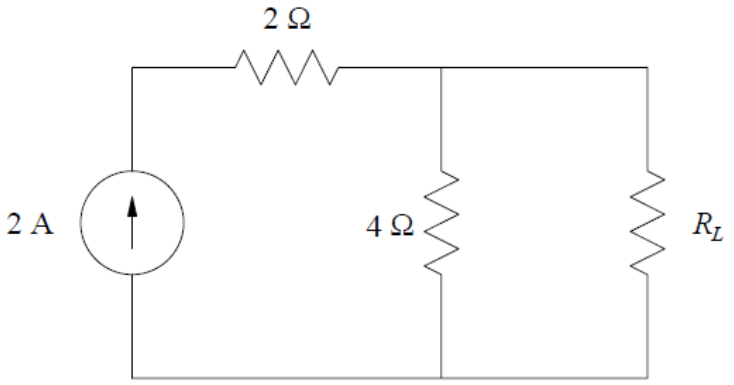
Instructor Name: Eng. M. Timraz
Student No.: _____
Student Name: _____
College Name: _____
Dep. / Specialist: _____
Using Dictionary (No)

Question One: (05/50)

A) What is the total capacitance in the circuit? **2.5 Pt.**
What is the charge on the plate of the 6μf capacitor?



B) Calculate what value of R_L will absorb maximum power and find the maximum power for the circuit in the following Figure. **2.5 Pt.**



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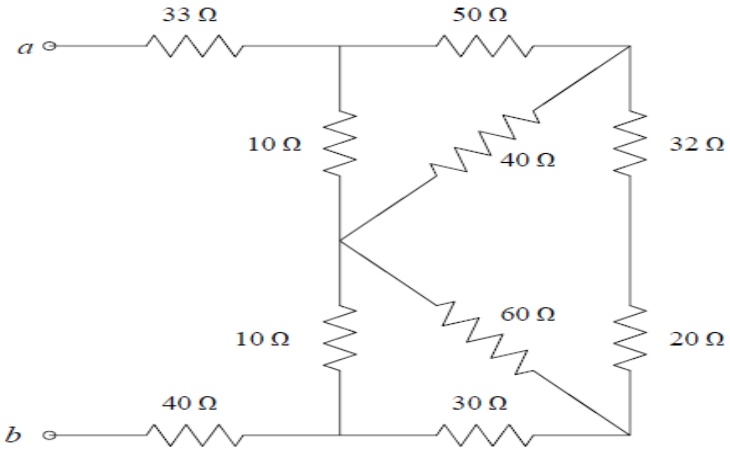
Question Two: (05/50)

Find the equivalent resistance R_{ab} in the circuit in the following figure.

$$R_a = \frac{R_1R_2 + R_2R_3 + R_3R_1}{R_1} \qquad R_1 = \frac{R_bR_c}{R_a + R_b + R_c}$$

$$R_b = \frac{R_1R_2 + R_2R_3 + R_3R_1}{R_2} \qquad R_2 = \frac{R_cR_a}{R_a + R_b + R_c}$$

$$R_c = \frac{R_1R_2 + R_2R_3 + R_3R_1}{R_3} \qquad R_3 = \frac{R_aR_b}{R_a + R_b + R_c}$$



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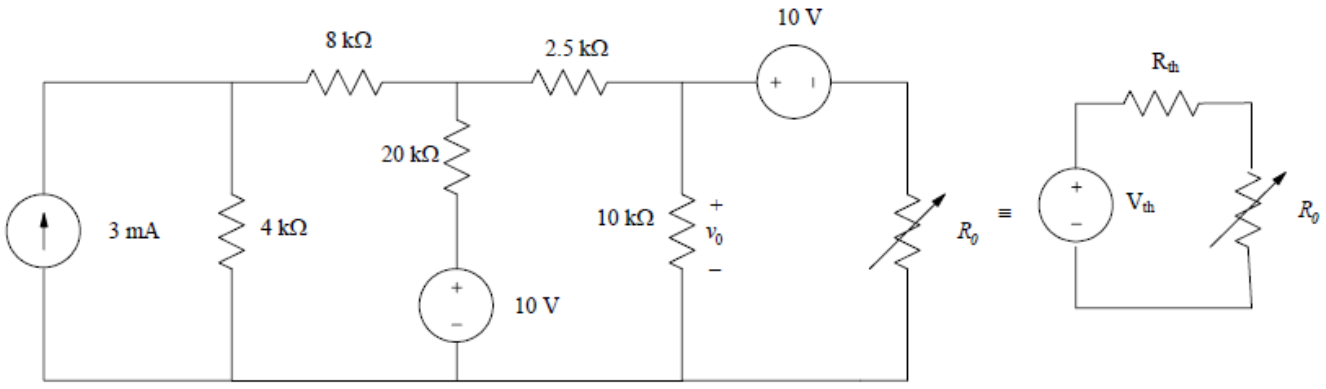
Question Three: (10/50)

The variable resistor in the following circuit is adjusted for maximum power transfer to R_0.

a. Find the value of R_0.

b. Find the maximum power that can be delivered to R_0.



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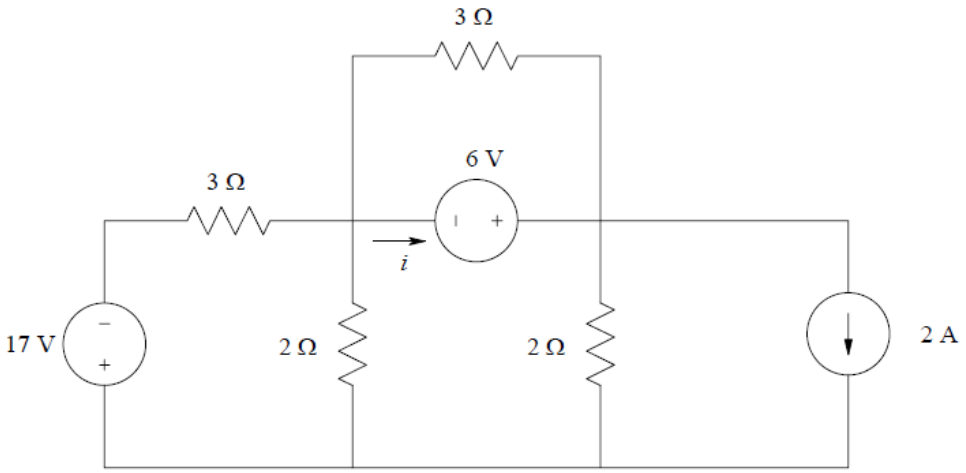
Question Four: (10/50)

Use the principle of superposition to find i in the circuit in the Figure below.



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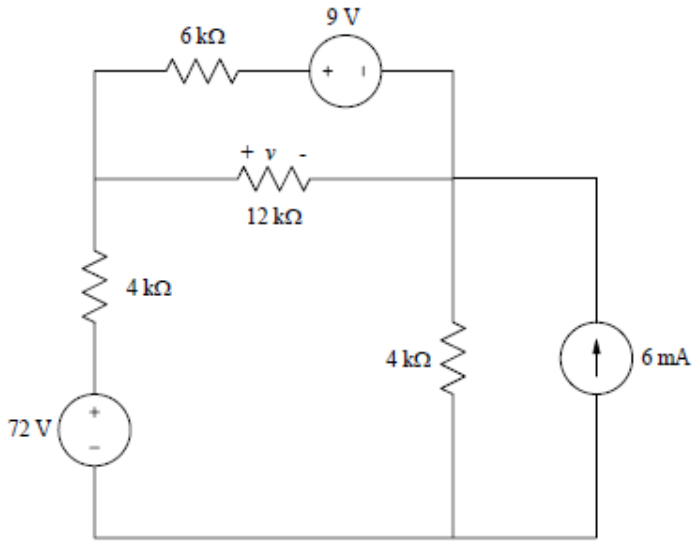
Question Five: (10/50)

Find *V* in the circuit in figure below by using source transformation.



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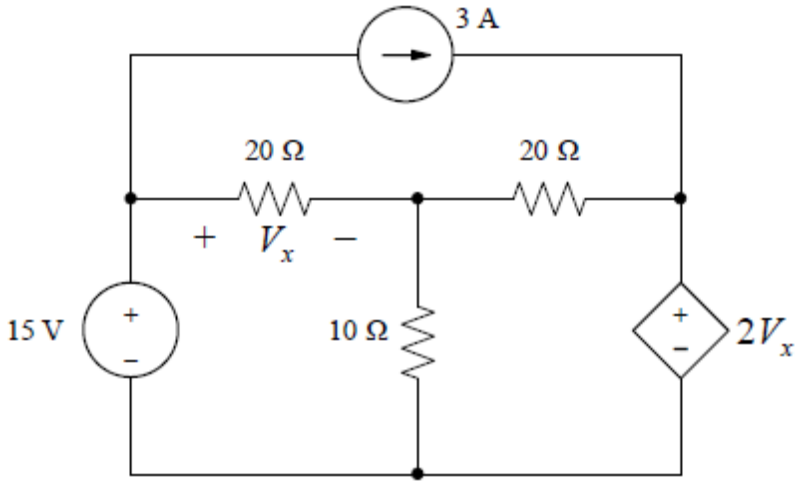
Question Six: (10/50)

In the circuit below, find the voltage V_x using mesh analysis.



End of Questions
Good Luck