KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

ELECTRICAL ENGINEERING DEPARTMENT

SECOND SEMESTER 2009-2010 (092)

Course Title:	Electric Circuits I
Course Number:	EE 201

Exam Type:	MAJOR EXAM II
Date:	May 8, 2010
Time:	07:00 pm – 8:30 pm (1 & 1/2 hours)

Student Name: _____

Student ID: _____

Section: _____

Serial Number: _____

GRADING		
Question 1	7	
Question 2	5	
Question 3	9	
Question 4	9	
Total:	30	

Be neat, organized, and show all your work and results.

Question 1:

For the ideal op-amp circuit shown, determine the maximum resistance of R_a that results in the saturation of the op-amp.
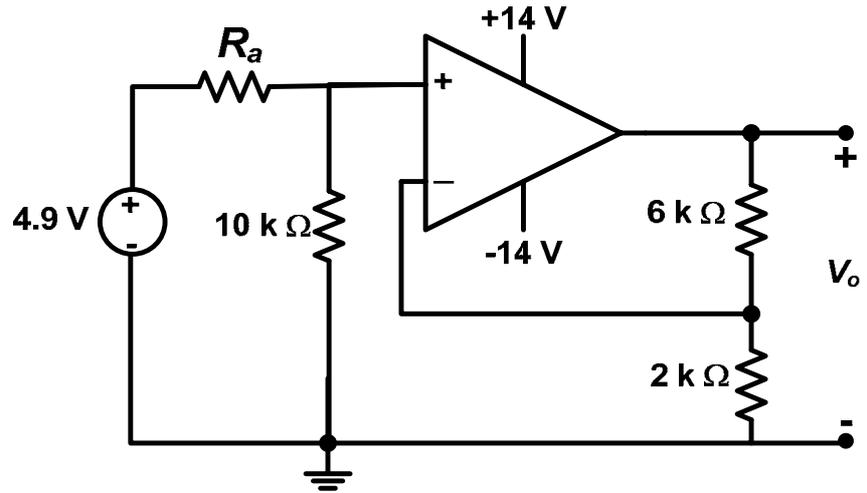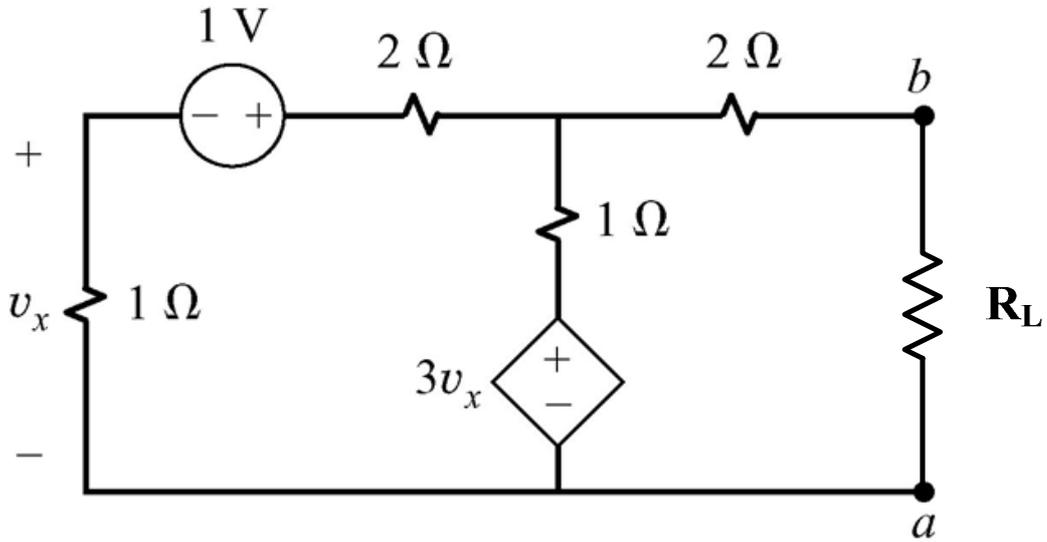
Question 2:

For the circuit shown, determine the current *i* using source transformations (ST). (use ST's all the way until the circuit can not be simplified any more and don't loose *i* in the transformations)
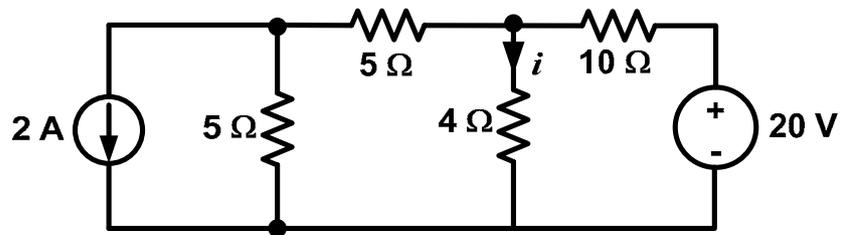
Question 3:

Determine the value of the resistor R_L that results in maximum power transfer to it by finding the open circuit voltage and the short circuit current using mesh analysis.

Question 4:

For the following circuit, the switch was in position 1 for long time before moving to position 2 at $t = 0$, find $v(t)$ and $i(t)$ for $t \geq 0$.