ECE

UNIT 3

1270   PRACTICE EXAM

THE
UNIVERSITY
OF UTAH
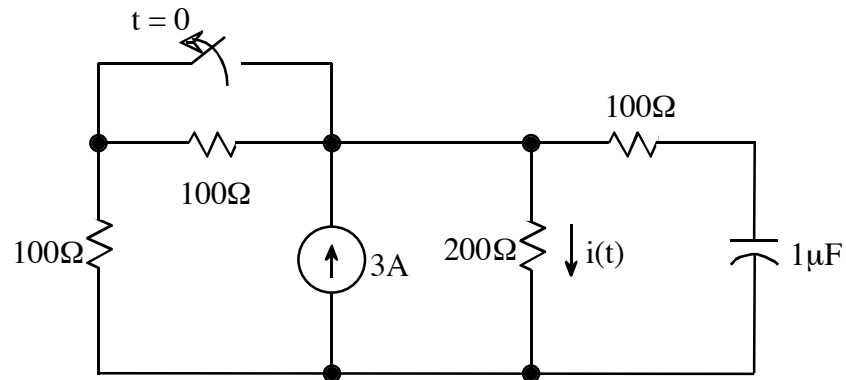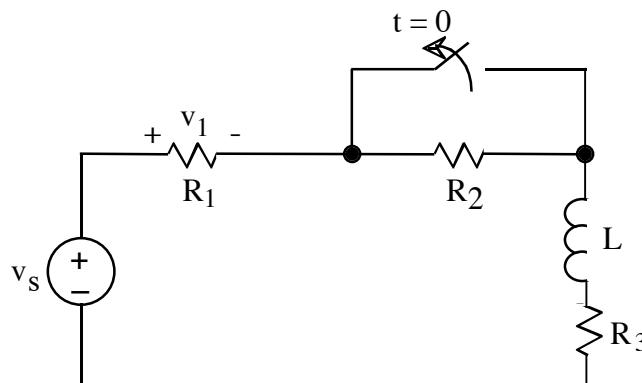
1.   (30 points)

After being closed for a long time, the switch is <u>opened</u> at t = 0.

a.   Write a numerical expression for i(t), t > 0.

b.   Calculate the energy stored in the capacitor at t = 0+.

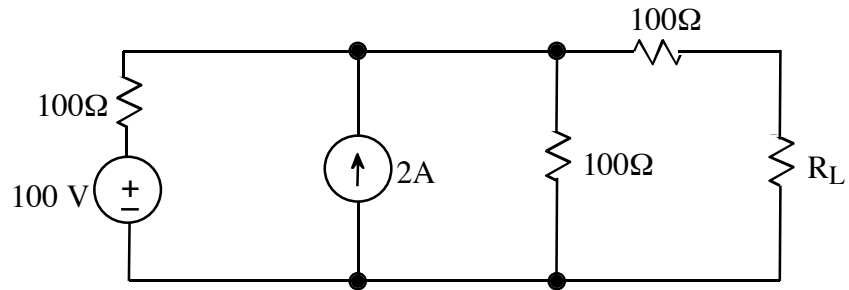c.   Calculate the energy stored in the capacitor as t –> ∞.

2.   (25 points)

After being closed for a long time, the switch is <u>opened</u> at t = 0.
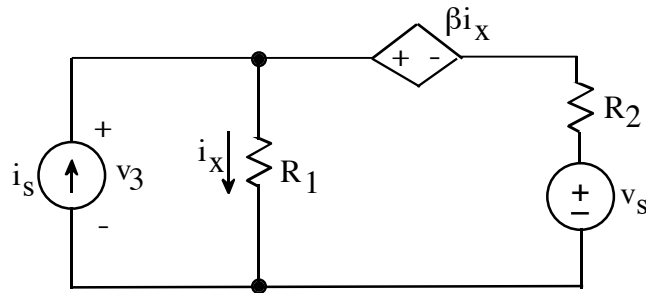
a.   Write an expression for $v_1(t)$, t > 0.

b.   Make one consistency check (other than units) on your answer.

3.   (20 points)

a.   Calculate the value of R_L that would absorb maximum power.

b.   Calculate that value of maximum power R_L could absorb.

4.   (25 points)

Using superposition, derive an expression for v_3 that contains no circuit quantities
other than i_s, v_s, R_1, R_2, and β.