## Midterm II EEE 117 Date 04/12/2022 (1:30 - 2:45 p.m.)

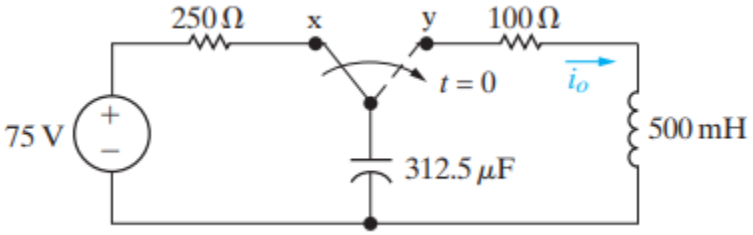
**SOLUTION MUST BE HAND WRITTEN AND SUBMIT THEM BEFORE 3:00 P.M.**

**Q-1** The switch in the circuit shown below has been in position x for a long time. At t=0, the switch moves instantaneously to position y. (**40 points)**

a) Construct an s-domain circuit for t > 0

b) Find $I_0$

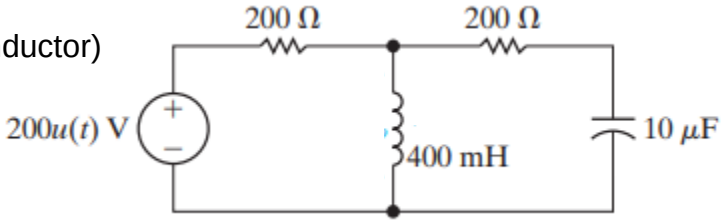
c) Find $i_0$




**Q-2** There is no energy stored in the circuit shown below at t= $0^-$ (**20 points)**

a) Construct an s-domain circuit for t > 0

b) Find $V_0(s)$ (Voltage across inductor)




**Q-3** Draw Straight line Bode diagram for Amplitude and Phase. (**40 points)**

Draw on Semi log sheet and show both individual and combined results.

(Ignore damping effect)

a) $H(s) = \dfrac{40000(s+4)}{(s+400)(s+4000)}$

b) $H(s) = \dfrac{10(s^2 + 2s + 1)}{(s^2 + 5s + 100)}$