United International University

Department of Computer Science and Engineering

Course Code: EEE 2113 | Course name: Electrical Circuit

Fall 2020 | FINAL Examination | 25 marks | 90min

There are four (4) questions here. Answer all of them.

Data Generation for example ID - 011xxyyzz

Last 6 digits will be used as data	**011**	R_{xx}	R_{yy}	R_{zz}
Example ID	011	xx	yy	zz
Your ID	011			

1. Find the value of R_L in the following circuit for maximum power absorption. Also calculate the amount of maximum absorbed power by R_L. [6]

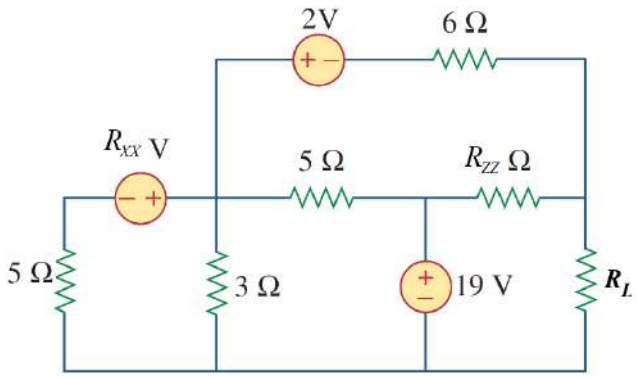

Figure for Q-1

2. Using superposition theorem find current $i_X(t)$ through 0.2 H inductor. Here, [9]

$$v_s(t) = 10\sin(R_{ZZ}t + 25^0)V$$
$$i_s(t) = 5\cos(R_{YY}t - 5^0)V$$
$$V_{DC} = R_{XX}\,V$$

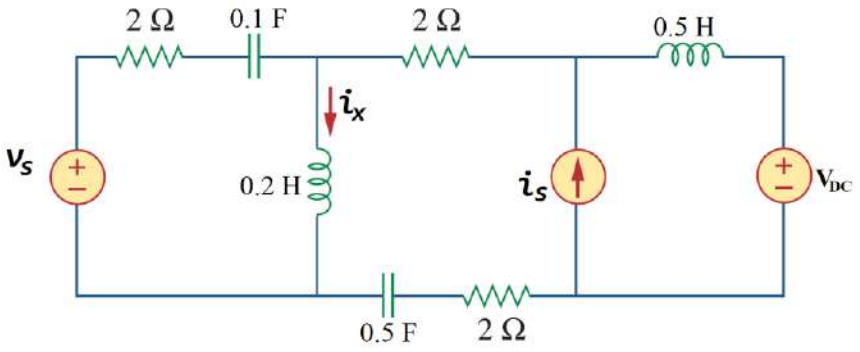

Figure for Q-2

3. Determine $\boldsymbol{v_1, v_2, v_3, I, I', I''}$ in the following circuit using current and voltage division rules. Also calculate the value of $\boldsymbol{L}$ in $\boldsymbol{H}$ and $\boldsymbol{C}$ in $\boldsymbol{F}$. [5]

$$v_s(t) = 75cos(R_{xx} \times 5t) \quad V$$

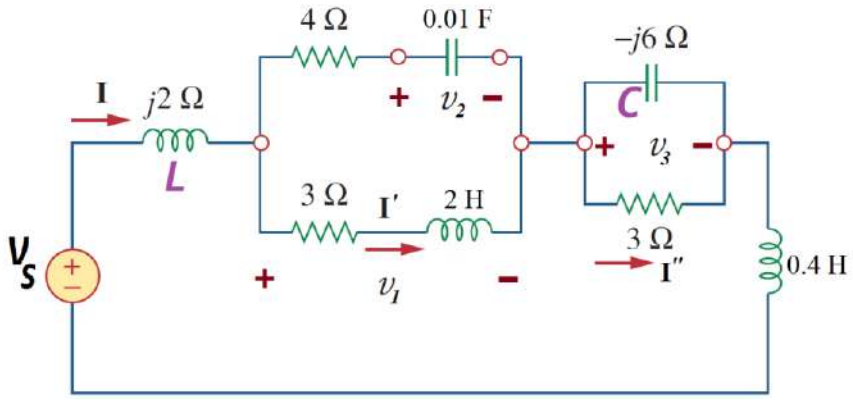

Figure for Q-3

4. Use mesh analysis method to obtain mesh currents in the following circuit. You must show detail of all calculations. [5]

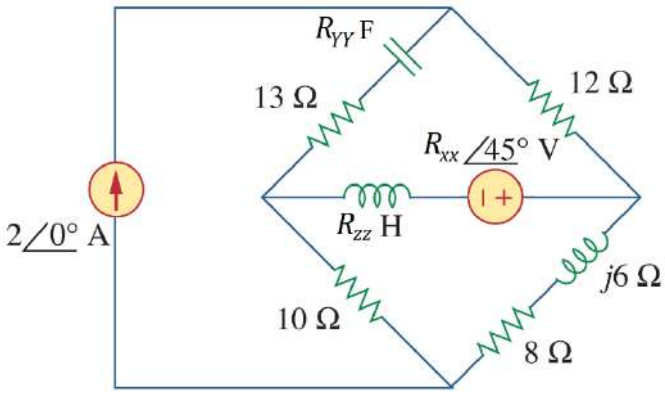

Figure for Q-4

Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules