United International University

Department of Computer Science and Engineering

Course Code: EEE 2113 | Course name: Electrical Circuit

SPRING 2021 | FINAL Examination | 40 marks | 1 hour and 30 minutes

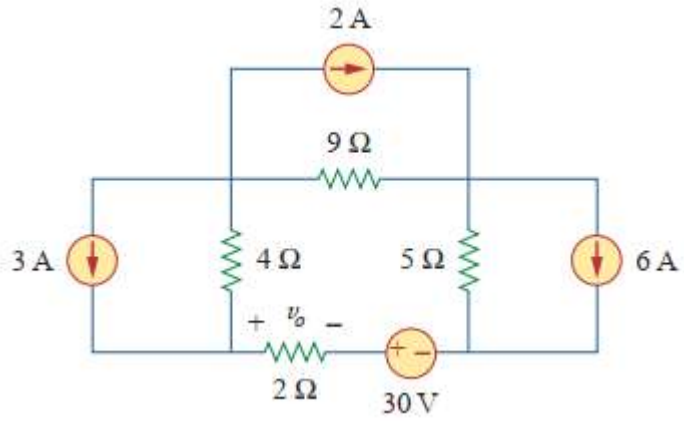
There are four (4) questions here. You have to answer all of them.

Question no - 2 has an option.

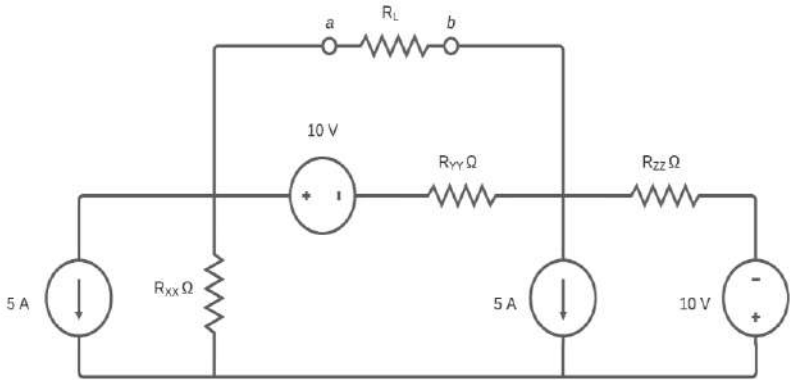
Data Generation for example ID - 011xxyyzz

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. Use **Superposition theorem** to find V_o in the following circuit. **10**

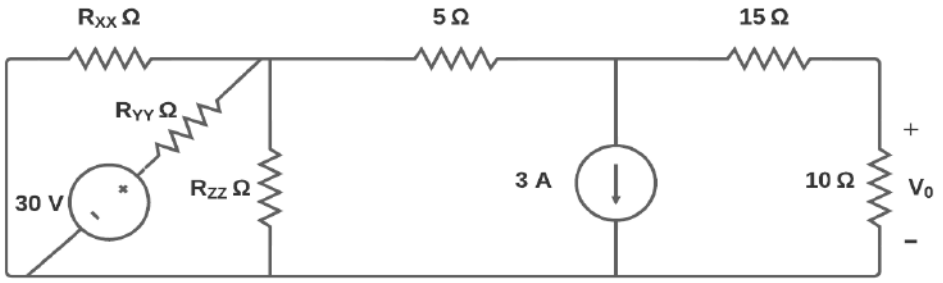


2. Obtain the **Thevenin equivalent** at terminals a-b in the following circuit. Find the **value of R_L** for maximum power absorption. Calculate the amount of **maximum absorbed power** by R_L. **10**

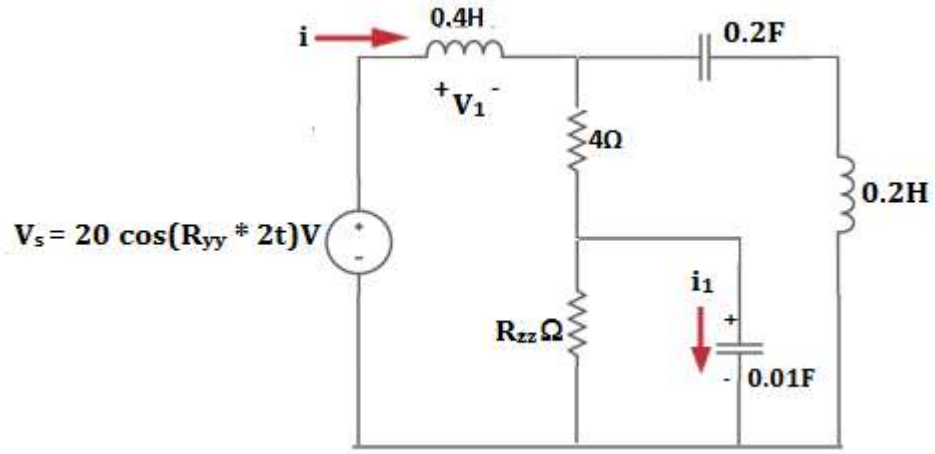


OR

Use **Norton's theorem** to find V_0 in the following circuit.

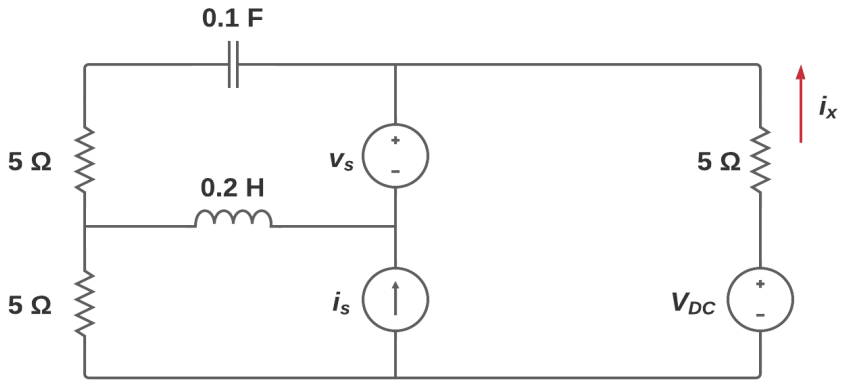


3. Find out the value of **i** in the following circuit. Also find out the value of $\mathbf{v_1}$ and $\mathbf{i_1}$ using **voltage division rule** and **current division rule**. Represent **i**, $\mathbf{v_1}$ and $\mathbf{i_1}$ in time domain. **10**



4. Using the superposition theorem, find $\mathbf{i_x(t)}$. Here, **10**

$$v_s(t) = 50\cos(R_{XX}\,t)\ V$$
$$i_s(t) = 2\sin(R_{YY}\,t)\ A$$
$$V_{DC} = R_{ZZ}\ V$$



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