University of Jordan
Electrical Engineering 903203
Quiz 3
Time: 10:00-10:45

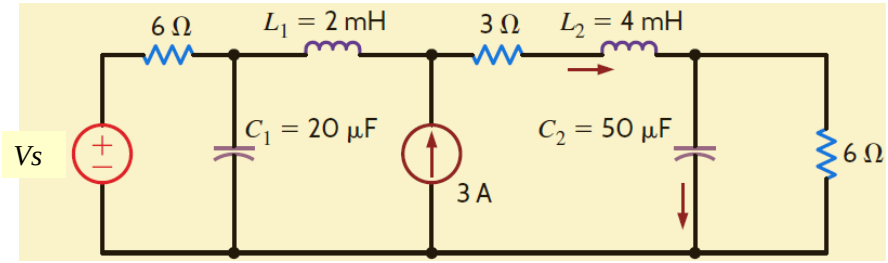
Note: Answer all the questions (here) first on a piece of paper. Then, you need to enter the final answers (only) on the MS form exam. Please be careful that the solutions of multiple questions may require part of your University ID number (e.g., last two digits from the right. e.g., 017903**53** the last digit from the right is 53).

The answers on the MS form exam will be only graded.

For the circuit shown below if V_s = 9*(1+*N*) Volt and the circuit is operated under steady state conditions then answer **(Questions 1 – 2).** *Assuming that N is an integer that equals the* ***last two digits*** *of your University ID number from the Right*.

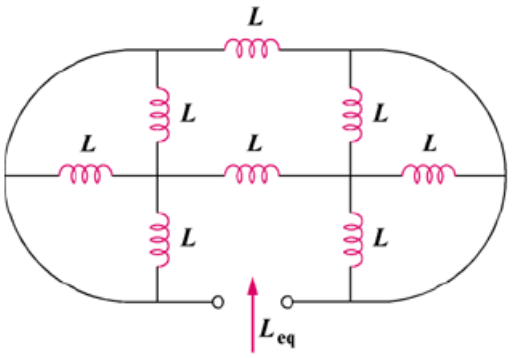
Question 1 (2 point): The value of the *current through* L_2 (in Ampere) is ----------

Question 2 (2 point): The value of *Energy stored in* C_2 (in mJ) is ----------

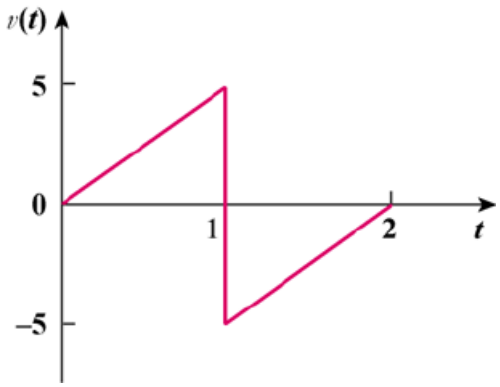


For the circuit shown below if L = (1+*N*) Henry. *Assuming that N is an integer that equals the* ***last two digits*** *of your University ID number from the Right*, then answer **(Question 3)**

Question 3 (2 point): The value of L_{eq} (in Henry) is ----------

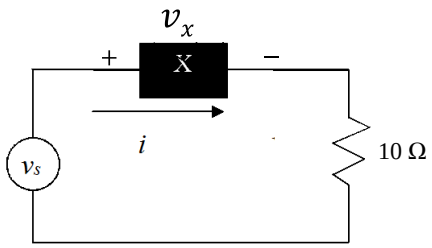


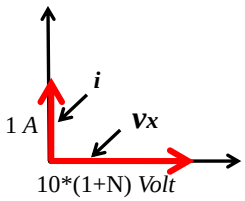
The figure below shows the voltage waveform across 1H inductor if *i*(t=1) = 2.5*(N+1) A. *Assuming that N is an integer that equals the* ***last two digits*** *of your University ID number from the Right*, then answer **(Question 4)**



Question 4 (2 point): The value of *i* (t=2) (in Ampere) is ----------

The figures below show a circuit and the corresponding phasor diagram for the element X. If $v_s(t) = V_m \cos(\omega t + \theta)$. *Assuming that N is an integer that equals the* ***last two digits*** *of your University ID number from the Right*, then answer **(Questions 5 – 7).**





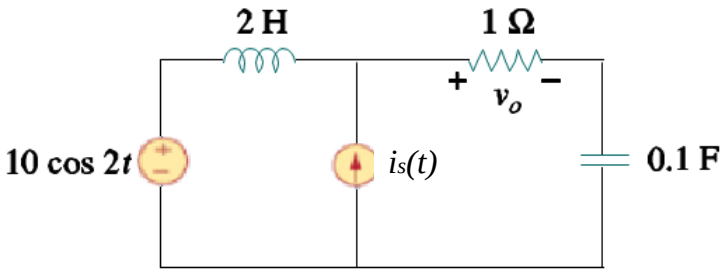
Phasor diagram for the element X

Question 5 (2 point): The reactance of the element X (*in ohms*) is ----------

Question 6 (1 point): The value of *Vm* (*in Volt*) is ----------

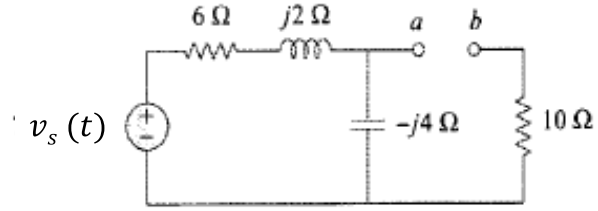
Question 7 (1 point): The value of θ *(in degree)* is ----------

For the circuit shown below if $i_s(t)=2(N+1)\sin(5t)$. Using the superposition method, and after disconnecting the voltage source (i.e., replaced by short circuit) the voltage across the resistance becomes $v_o(t) = V_{m1} \cos(10t + \theta_1)$. *Assuming that N is an integer that equals the* ***last two digits*** *of your University ID number from the Right*, then answer (Questions 8-9)



Question 8 (1 point): The value of V_{m1} (in Volt) is ----------
Question 9 (1 point): The value of θ_1 (in degree) is ----------

For the circuit shown below if $v_s(t) = 75(N+1) \cos(\omega t + 20^o)$ and the Thevenin voltage seen from a and b is $v_{Th} = |V_{th}|\angle\theta_{th}$. *Assuming that N is an integer that equals the* ***last two digits*** *of your University ID number from the Right*, then answer **(Question 10)**



Question 10 (1 point): The value of θ_{th} (in degree) is ----------