



Given the above schematic diagram and  $V_s$ : magnitude 5V, frequency 1KHz, and phase 0 and  $I_s$ : magnitude 20mA, frequency 1KHz and phase  $\pi/4$ , answer the following questions for AC steady state analysis.

Q1. Magnitude of  $V_s$  in peak-to-peak voltage.

Q2. Angular frequency of  $V_s$  in rad/s.

Q3. Magnitude of impedance of R2 in ohm.

Q4. Magnitude of impedance of C1 in ohm.

Q5. Phase of impedance of L1 in radian.

Q6. Magnitude of  $V_x$  in peak-to-peak voltage.

Q7. Frequency of  $V_x$  in Hz.

Q8. Phase difference between  $V_x$  and  $V_s$  ( $\theta_x - \theta_s$ ) when  $\theta_x$  is a phase of  $V_x$  and  $\theta_s$  is a phase of  $V_s$ . in radian.

Write your answers in the following format.

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| <p>A1. <math>V_s = 0</math> Vpp<br/> A2. <math>\Omega = 0</math> rad/s<br/> A3. Mag = 0 ohm<br/> A4. Mag = 0 ohm<br/> A5. Phase = 0 rad<br/> A6. Mag = 0 Vpp<br/> A7. Freq = 0 Hz<br/> A8. Phase = 0 rad</p> |
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