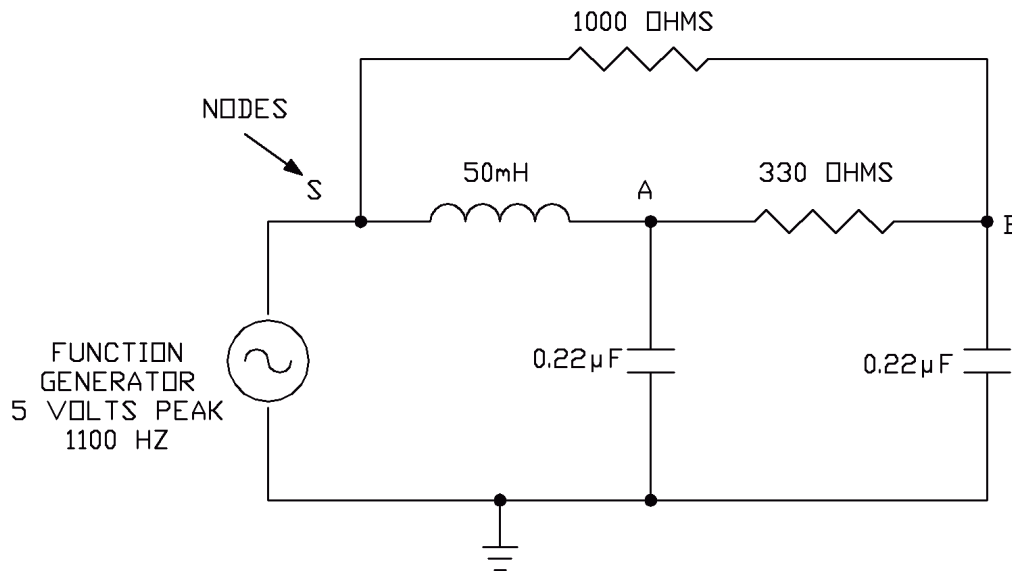


Name _____

Section A

Note: All measured or calculated values must have the correct units (i.e. V_{RMS} or degrees)

- Construct the circuit show below with the parts supplied. Set the function signal generator for a peak voltage of 5 volts and a frequency (f) of 1100 Hz. Measure the node voltages shown below with the DMM. If a voltage has only one node subscript (i.e. V_A) the voltage is to be measured from that node to ground. If a voltage has two node subscripts (i.e. V_{A-B}) the voltage is to be measured between the nodes. (72 points)



V_S : 2.802 V_{RMS}

V_A : 6.363 V_{RMS}

V_B : 4.929 V_{RMS}

V_{S-A} : 4.989 V_{RMS}

V_{A-B} : 2.046 V_{RMS}

V_{B-S} : 4.469 V_{RMS}

- Using the oscilloscope channel 1 connected to node S (the signal generator output voltage) and the oscilloscope channel 2 connected to node A compute the phase shift of node A with respect to node S. Also note if the voltage at node A is leading or lagging the signal generator voltage (node S). Repeat with the oscilloscope channel 2 connected to node B. Record all Δt 's and phase shifts below. All calculations must be shown. (28 points)

Δt_{S-A} : 123.288 μS

Phase Shift at node A: 48.82 Deg Lag

$$\text{Phase Shift} = \left(\frac{\Delta t}{T} \right) (360^\circ)$$

Δt_{S-B} : 161.644 μS

Phase Shift at node B: 64.01 Deg Lag

Where $T = \frac{1}{f}$