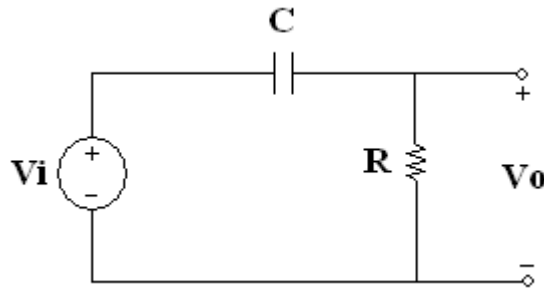


## JEE2330 – Spring 2025

### Lab #4 Problem

A RC circuit like the one shown here was constructed in the last lab. A digital oscilloscope was used to measure the input voltage  $v_i(t)$  and the output voltage  $v_o(t)$ . A hardcopy of the scope display is shown on the back. Based on this scope display, answer the following questions:



1. What input voltage would the DMM read on the DC scale?  $V_{iDC} =$  \_\_\_\_\_
  
2. What input voltage would the DMM read on the AC scale?  $V_{iAC} =$  \_\_\_\_\_
  
3. Calculate the effective (true RMS) value of the input voltage?  $V_{iEFF} =$  \_\_\_\_\_
  
4. What output voltage would the DMM read on the DC scale?  $V_{oDC} =$  \_\_\_\_\_
  
5. What output voltage would the DMM read on the AC scale?  $V_{oAC} =$  \_\_\_\_\_
  
6. What is the frequency of the voltage in Hertz?  $f =$  \_\_\_\_\_
  
7. What is the phase shift of the output voltage in degrees?  $\Theta =$  \_\_\_\_\_
  
8. Does the output voltage lead or lag the input voltage (circle one)? LEAD   LAG
  
9. What is the value of the capacitor C used here if  $R = 20 \text{ k}\Omega$ ?  $C =$  \_\_\_\_\_
  
10. What is the DC voltage stored on the capacitor?  $V_C =$  \_\_\_\_\_

### Oscilloscope Display:

- 1) Input Voltage (Channel 1)
- 2) Output Voltage (Channel 2)

