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ELEN 50 - Lab #5
Friday 2:15-5p

Pre-Lab:

$$\tau = RC = 5 \cdot 0.22 = 1.1 \text{ ms}$$

$$\text{From - to +: } V_{out} = 0.5(1 - e^{-t/\tau})$$

$$\text{From + to -: } V_{out} = e^{-t/\tau} - 0.5$$

Part A:

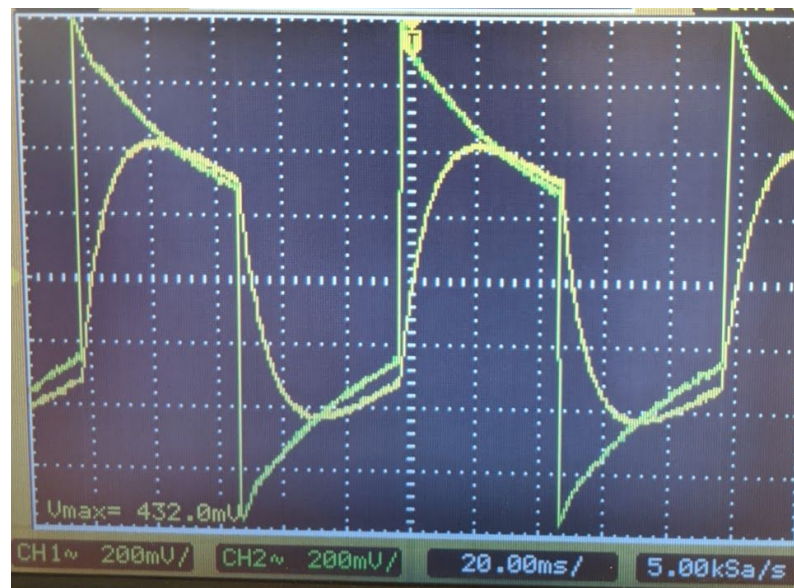
3. $V_c = 1.006V$ $I_c = .06mA$

4+5.



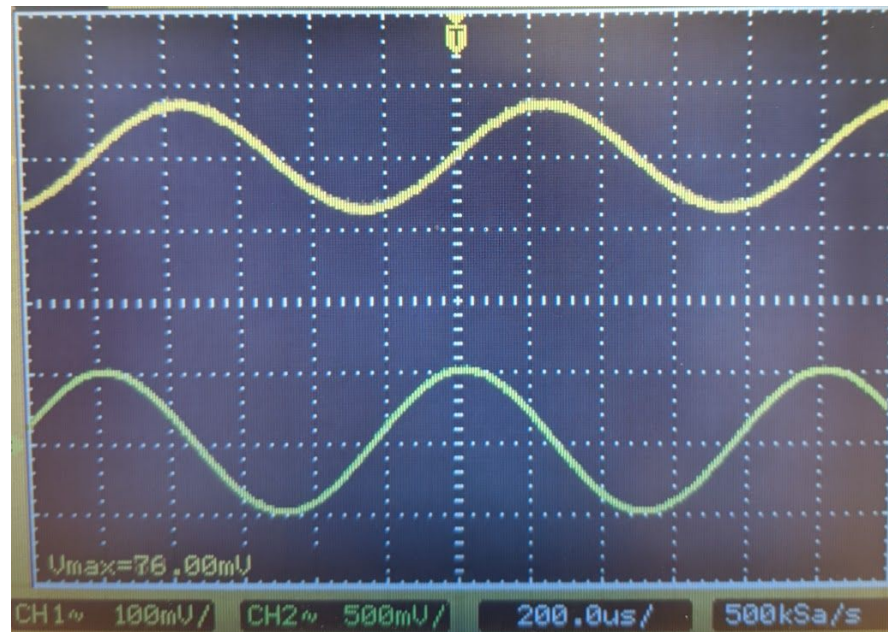
6. Measured time constant value of 1ms. 1ms is approximately equal to 1.1ms.

7.



Measured time constant value of 9ms. 9ms is approximately equal to 11ms. The difference is likely due to the non-square square input function as seen in the photo of the oscilloscope.

8. Amplitude decreased with increasing frequencies.



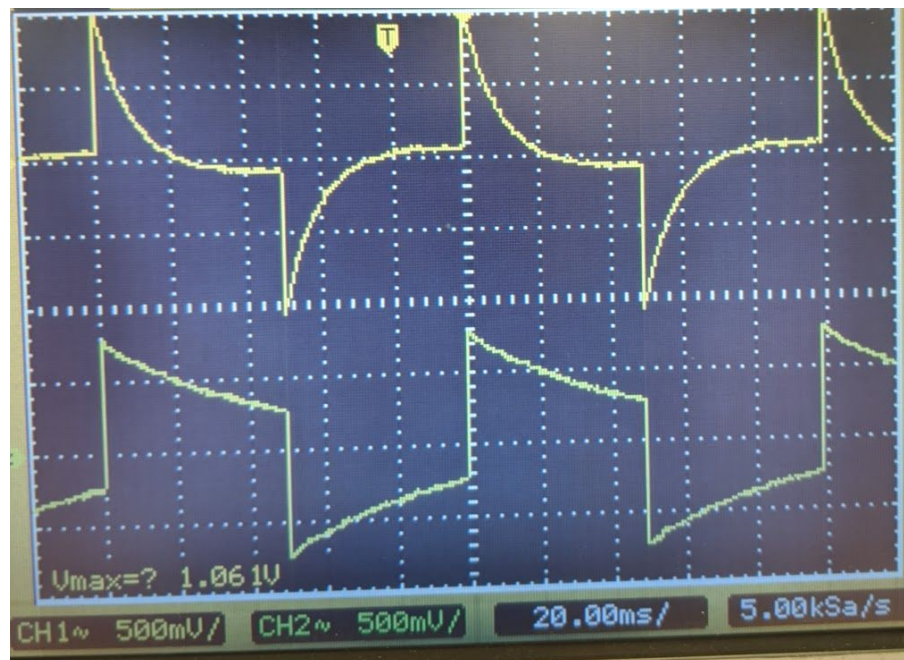
Part B:

1.



Measured time constant value of 1ms. 1ms is approximately equal to 1.1ms, the calculated time constant.

4.



Measured time constant value of 10ms. 10ms is approximately equal to 11ms, the calculated time constant.

5. As we increased the frequency the amplitude of the voltage across the resistor approaches the amplitude of the input voltage.

