Lab 9.2.1 Worksheet

3v ‾‾‾‾‾

0v ___

① $R_1 = 1k$ $I_c = 0$
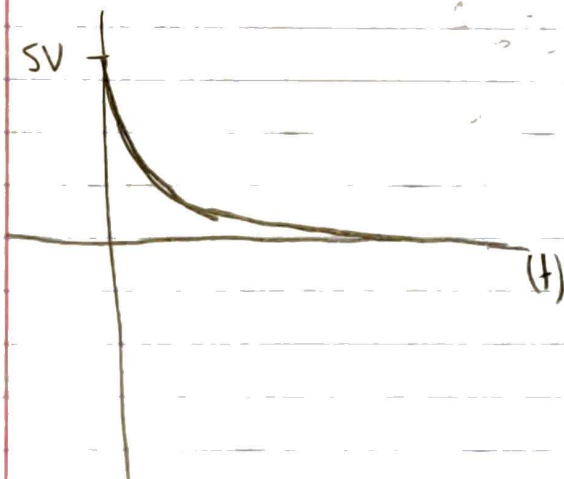
$5v$ $R_2 = 2.2k$ $+$ $V_c(t)$ I_{R_2}

$\tau = R_{eq} C = 3.2k(22\mu) = (3.2E3)(22E-6)$

④

$$= 7.04 E-2$$

②

$$V_c(t) = 5\frac{R_2}{R_2+R_1} = 5\frac{2.2}{2.2+1} = 3.44V$$

③

$V_c(\infty)_{measured} = 3.43V$

So in $70m/s$ we'd expect to lose ~60% of the voltage across the capacitor.
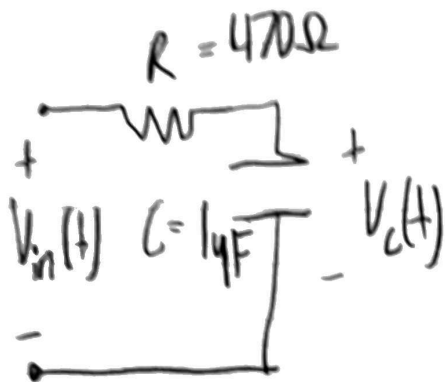
⑤ ✓

⑥ ✓

$5v$

(t)

Lab 9.5.1 worksheet

(1.)

(2.)

(4.)

(3.)

$$R = 470\,\Omega$$

$$\tau = (470)(1E-6) = 4.7E-4$$
$$= 470\,\mu s$$

$$V_{in} = iR + V_c(t)$$

$$V_c(t) = V_{in} - iR \qquad \tau_{est}: 540\,\mu s$$

$$14.8\%\ error$$

4v