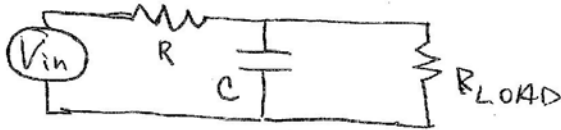


P59

#4 KILL "SCRATCHES" (HIGH f STUFF)
 WANT LOW PASS FILTER, $f_{3dB} = 10 \text{ kHz}$



AGAIN, MAKE $R/R_{LOAD} \approx 0.1$

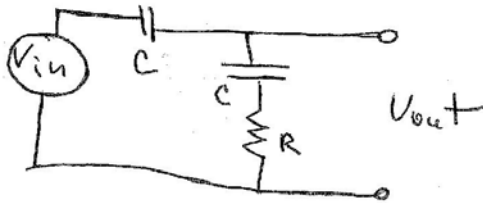
$\Rightarrow R = 1 \text{ k}\Omega$

ALSO,

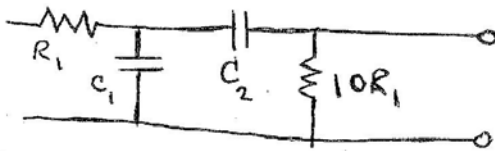
$$C \approx \frac{1}{2\pi R f_{3dB}} = 0.016 \mu\text{F}$$

$C \approx 0.02 \mu\text{F}$ OK TOO.

#5



#6 SEE LAB EXAMPLE 2, P49.



C_1 & C_2 CHOSEN TO SATISFY $f_{3dB} \approx \omega_1$ & ω_2 .

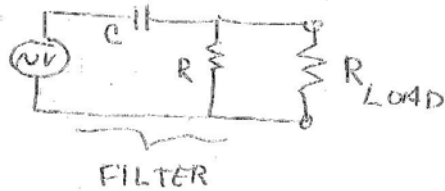
ORDER OF FILTERS CAN BE SWITCHED AS LONG AS R_1 & R_2 APPROPRIATELY ADJUSTED.

P59

PHYS 4211 HW2

T.E. COAN

#3 YOU WANT TO KILL "RUMBLES" (low f stuff)
⇒ DESIGN HIGH PASS CIRCUIT



$$\text{SET } f_{3dB} = \frac{1}{2\pi RC} = 10 \text{ Hz}$$

FIND R, C .

① CHOOSE R TO MAKE R_{LOAD} IRRELEVANT

$$\Rightarrow R \parallel R_{LOAD} \approx R$$

USE 10% RULE OF H. & H.: $R \leq \frac{R_{LOAD}}{10}$

$$\Rightarrow \boxed{R \approx 1 \text{ k}\Omega}$$

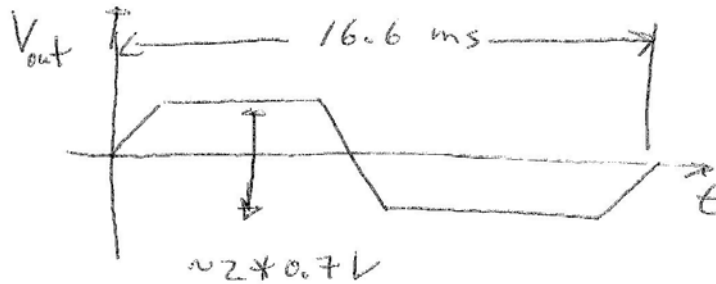
$$C = \frac{1}{2\pi R f_{3dB}}$$

$$\boxed{C \approx 16 \mu\text{F}}$$

$C \approx 20 \mu\text{F}$ OK TOO.

PHYS 4211

#7



WAVEFORM IS SYMMETRIC
DIODES CLAMP OUTPUT.
USEFUL TRICK FOR LIMITING
VOLTAGE INPUT INTO
SENSITIVE AMPLIFIERS.