

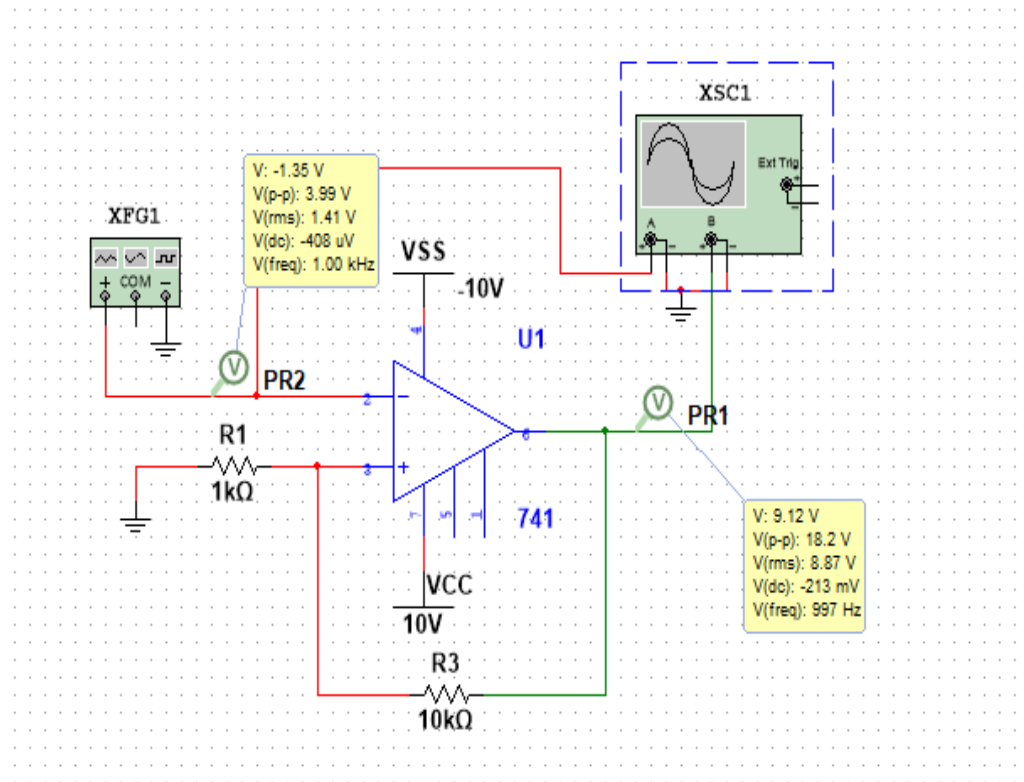
Lab 3

Analog IC

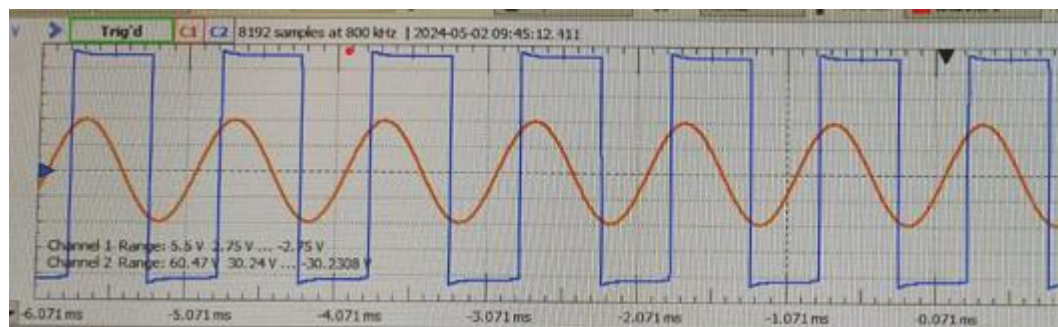
Name	ID	Section
Nada Tarek Mowafi	20012094	5
Salma Hamdy Mohamed	20010677	5

➤ **Inverting Schmitt trigger :**

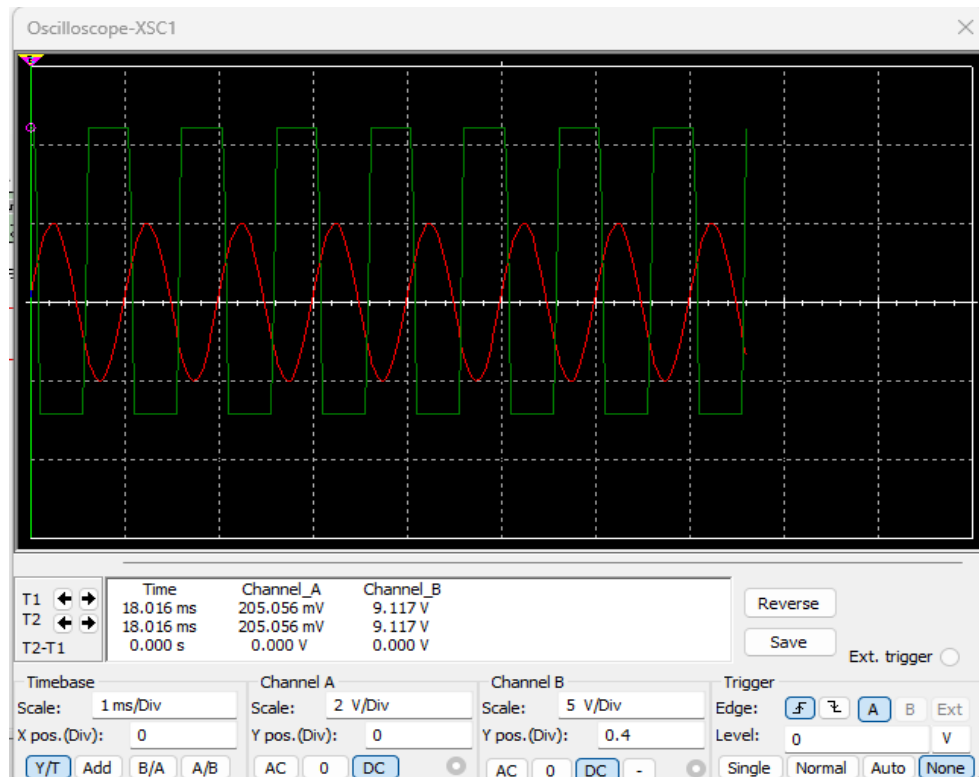
• **The circuit:**



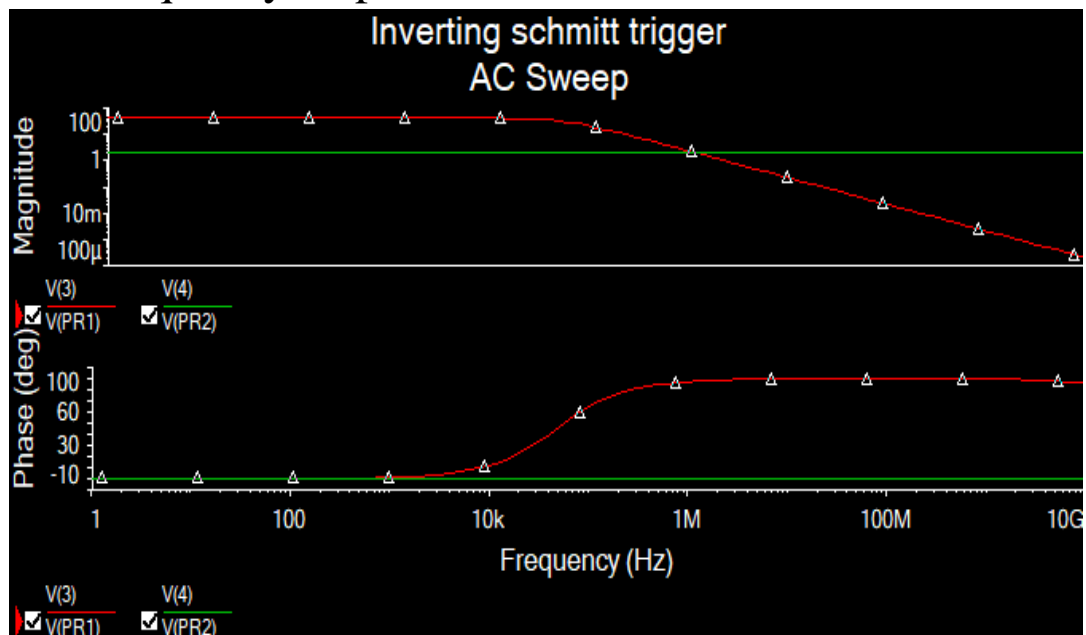
• **The output in the lab:**



- The output in multisim:

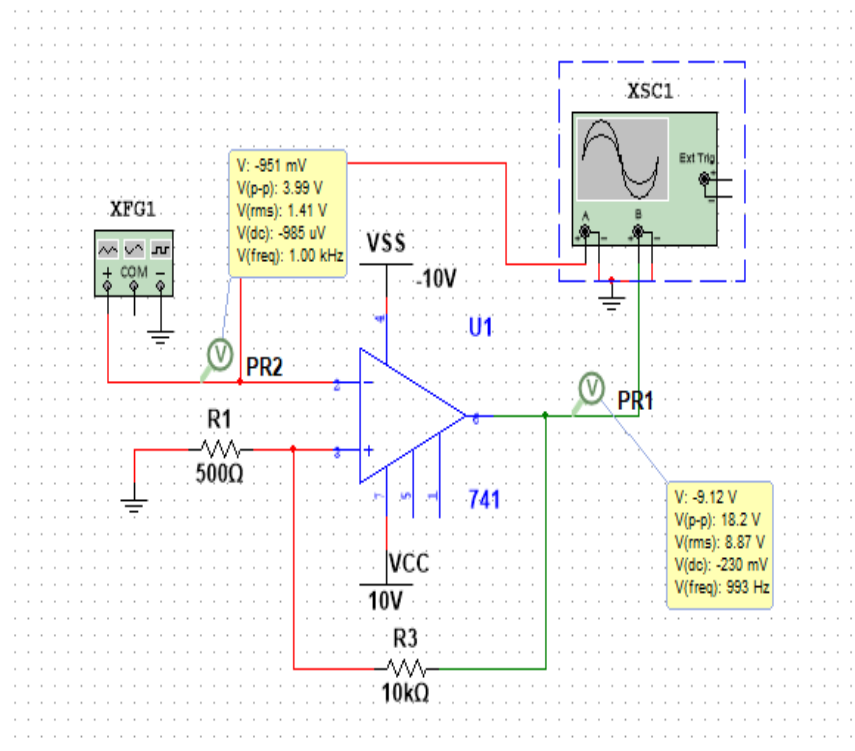


- The frequency response:

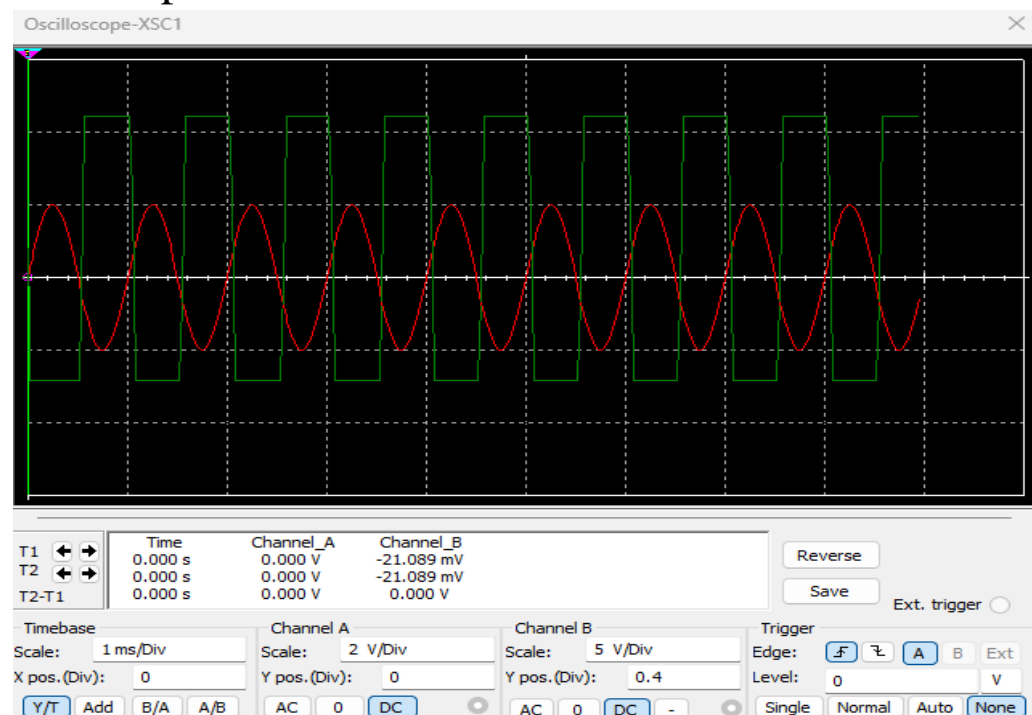


- The effect of changing R1 and R2:
 - When lower R1:

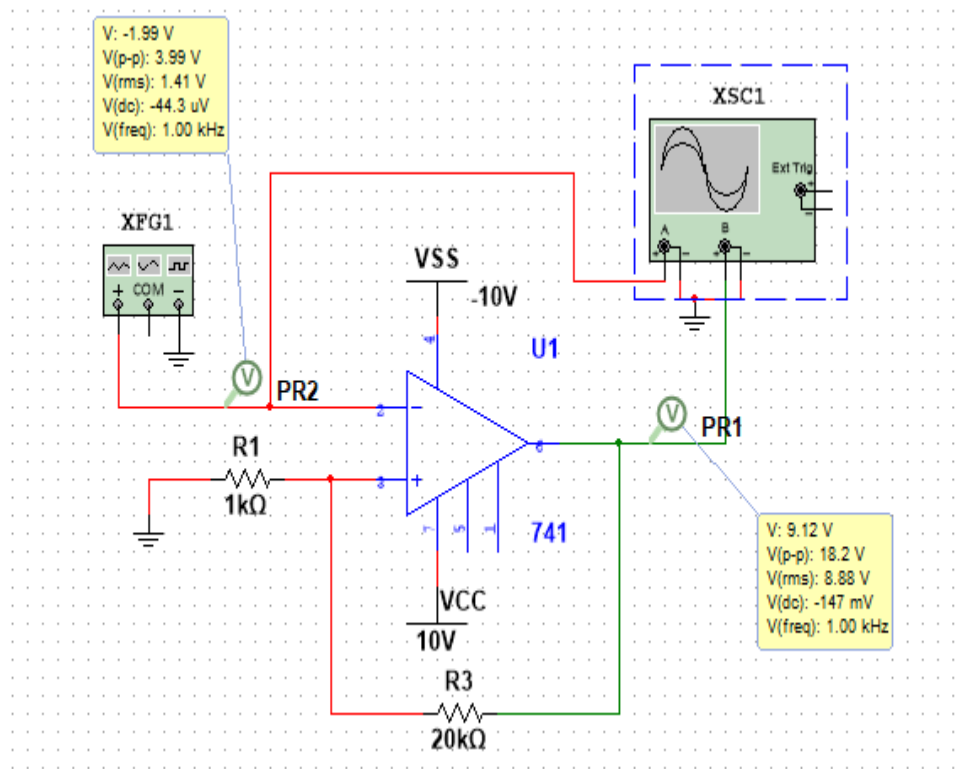
The circuit:



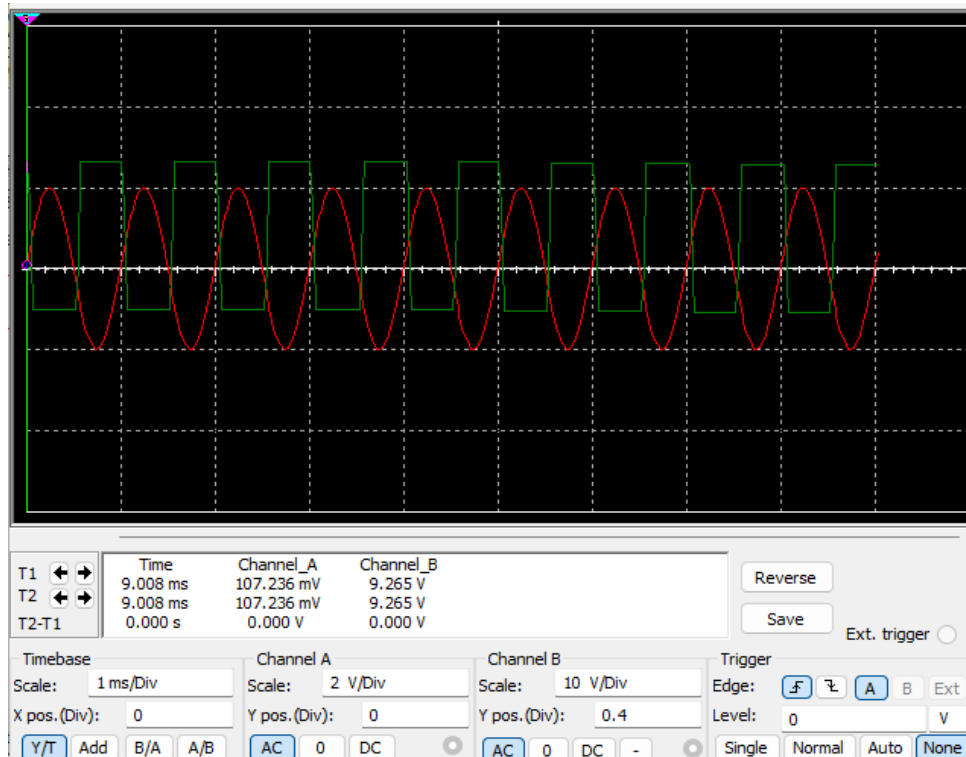
The output:



- When we increase R2:
The circuit:



The output:

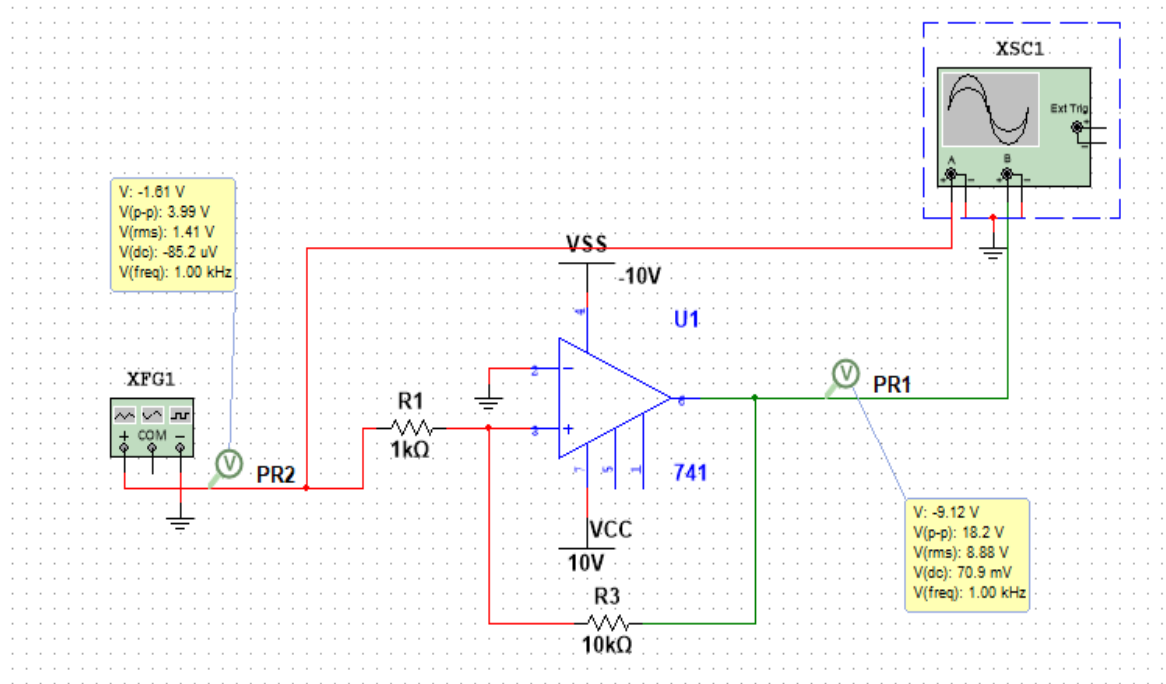


- **Comment:**

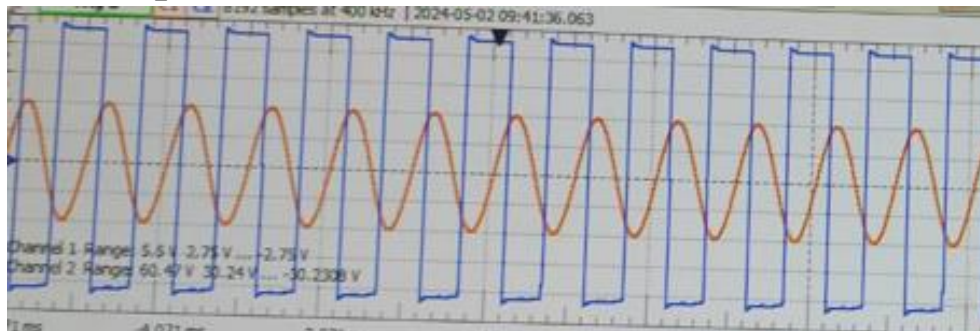
In an inverting Schmitt trigger circuit, the resistors R1 and R2 play a crucial role in determining the output behavior. Here's how varying their values affects the output.

- **Lower R1:**
Decreases the upper threshold voltage.
Increases the lower threshold voltage.
Net effect: Narrows the hysteresis loop. The output becomes more sensitive to smaller input signal changes.
- **Higher R2:**
Doesn't directly affect the threshold voltages (UT and LT).
However, it affects the overall gain of the inverting Schmitt trigger. A higher R2 increases the gain, amplifying the output voltage swing between positive and negative saturation levels.

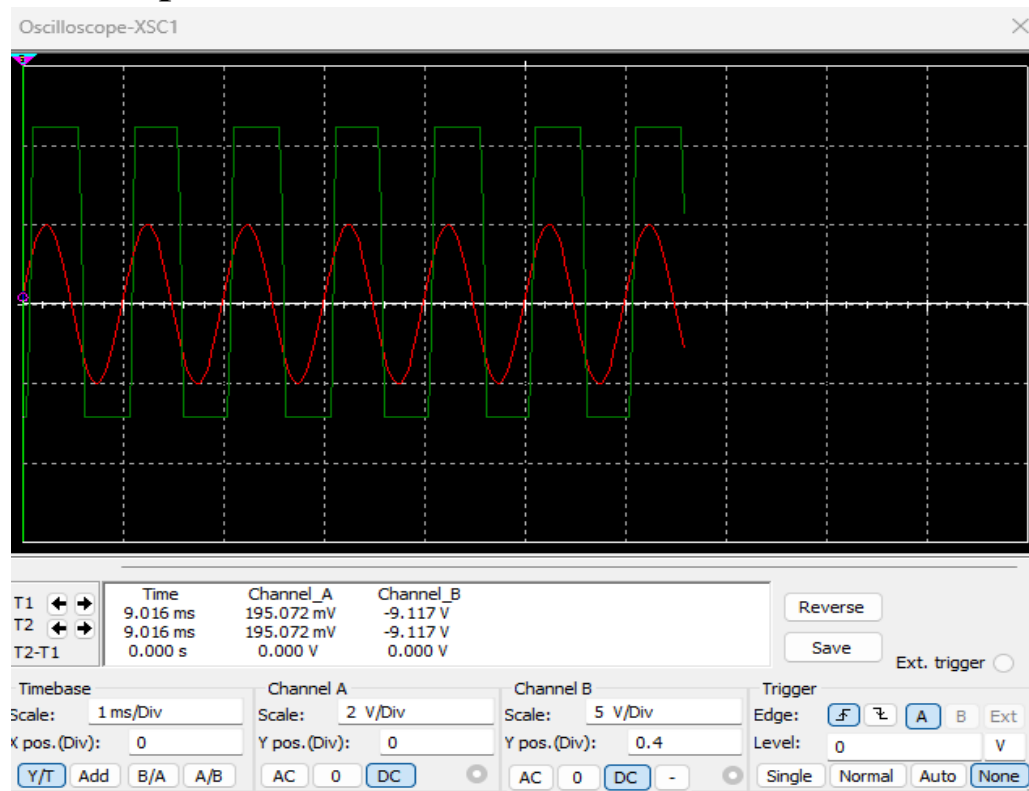
- Non inverting Schmitt trigger:
- The circuit:



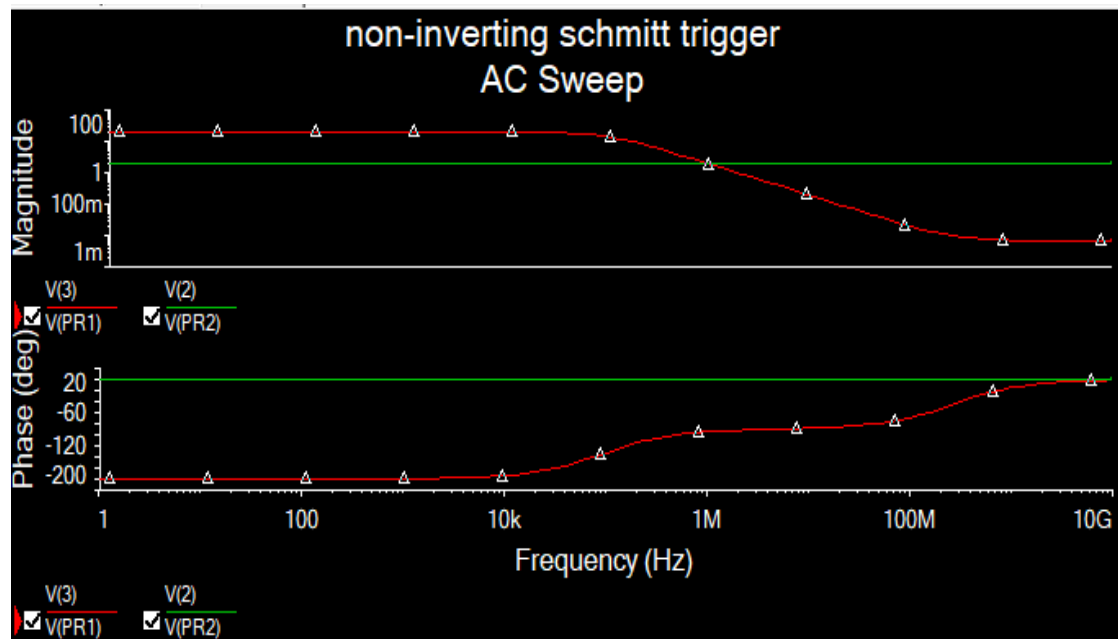
- The output in the lab:



- The output in multisim:

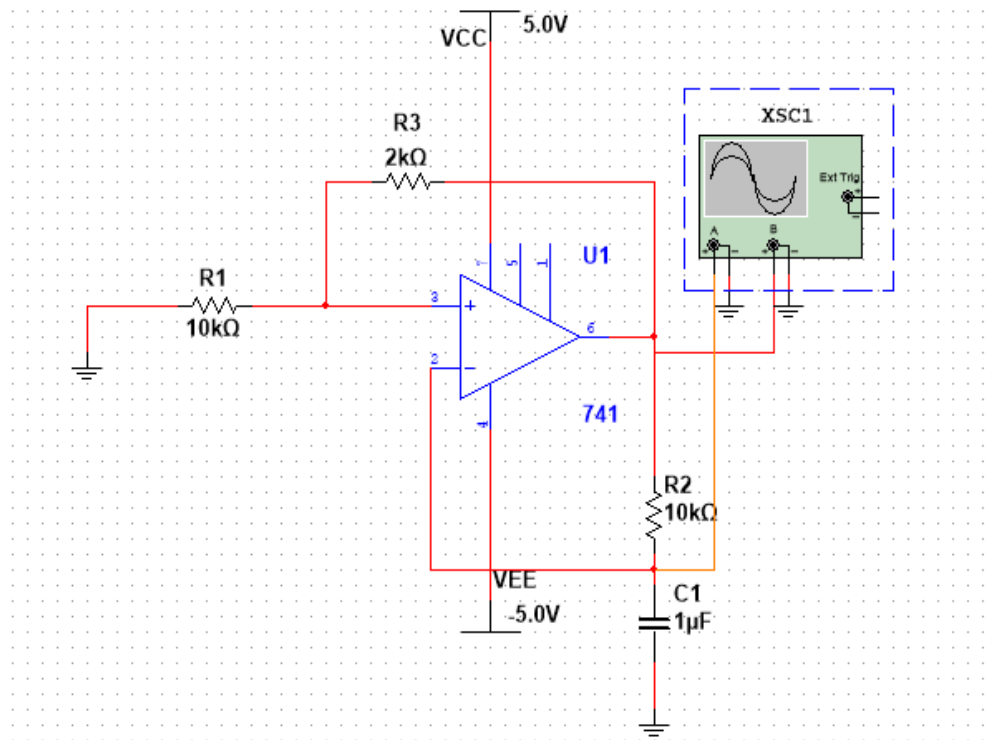


- The frequency response:

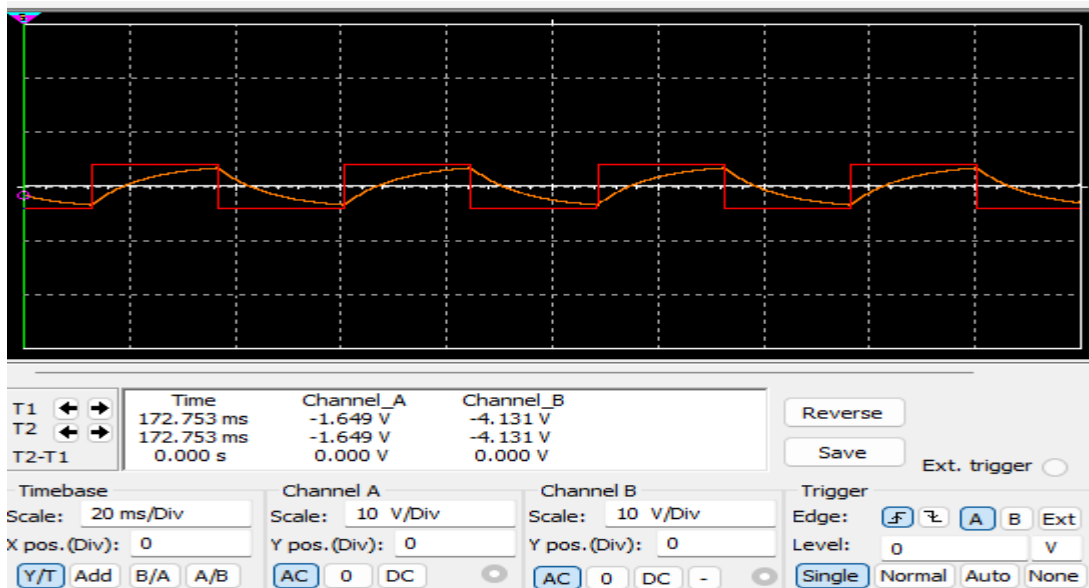


➤ Square wave generator:

- The circuit:



- The output from multisim:



- The output in the lab:

