UNIVERSITY OF CALIFORNIA AT BERKELEY
College of Engineering
Department of Electrical Engineering and Computer Sciences

EE105 Lab Experiments

Report 8: Multi-stage Amplifiers

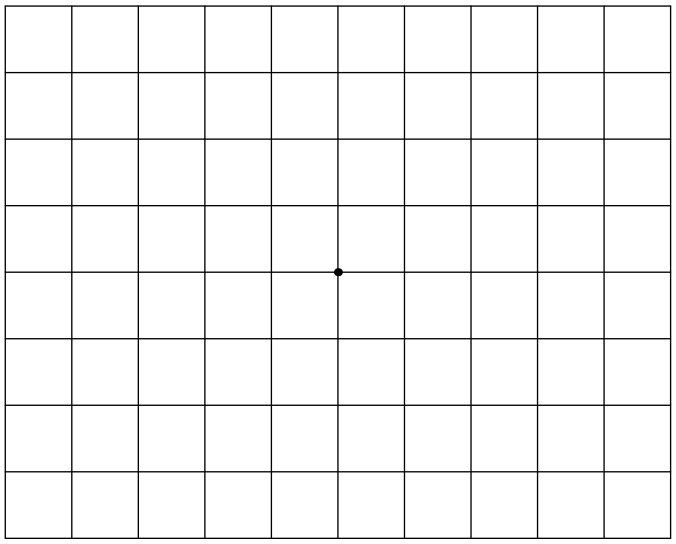
Name:

Lab Section:

3.1.3 Measure I_{BIAS} and the DC voltage at v_{OUT}.

$I_{BIAS} =$
$v_{OUT} =$

3.1.4 Using the oscilloscope, plot both the input v_{IN} and the output v_{OUT}. Sketch the waveforms you observe.



3.1.5 Why is v_{OUT} not sinusoidal?

3.1.7 What is the peak-to-peak voltage of the output waveform (at v_L) with the load resistor? What is the gain of the amplifier with the resistive load?

$v_{L,p-p} =$

$\left|\frac{v_L}{v_{in}}\right| =$

3.2.1 Can you hear anything when the speaker is directly hooked up to the function generator?

Yes or No

3.2.3 Can you hear anything when the speaker is hooked up to the output of the amplifier?

Yes or No

3.2.4 Measure I_{BIAS1}, I_{BIAS2}, and the DC voltages at v_{OUT1} and v_{OUT2}.

$I_{BIAS1} =$

$I_{BIAS2} =$

$v_{OUT1,DC} =$

$v_{OUT2,DC} =$

3.2.5 Measure V_{BE} of Q_2. Is the DC voltage at v_{OUT1} enough to bias Q_2 in the forward active region?

$V_{BE} =$

Yes or No

3.2.6 Using the oscilloscope, plot both the input v_{IN} and the output v_{OUT2}. Sketch these waveforms (a plot is on the following page).

3.2.7 Measure the gain v_{out2}/v_{in}.

$\left|\frac{v_{out2}}{v_{in}}\right| =$

3.2.8 Now increase the DC offset of the input waveform to 620 mV. What happens to the waveform at v_{OUT2}?