

EECE-315 Prelab 9

1. Refer back to your BJT amplifier homework problem and collect the following information:
 - a. The values of all resistors used in the circuit, as well as the value of V_{CC} .
 - b. Your design values of I_{CQ} .
 - c. Your design values of voltage gain.
 - d. Your design value of input resistance.
 - f. Your design value of the output voltage swing.
2. Acquire all of the components you will need to build your BJT design in lab, and bring them to lab.

EECE-315 Lab 9

1. Build up the amplifier circuit you designed in homework. Use either 10 μF or 100 μF for all capacitors. Measure all resistors.
2. Measure the quiescent collector current and compare to your design value. Use a curve tracer to determine the ac and dc β values of your transistor near the measured Q point.
3. With the measured resistors and β value, calculate the theoretical ac voltage gain, input resistance, maximum up and down swings at the output.
4. Measure the ac voltage gain at 10 kHz and compare to your original design value, and the value calculated in step 3.
5. Determine the maximum upward and downward output voltage swing values. Compare to your original design values, and the values calculated in step 3.
6. Measure the input resistance at 10 kHz and compare to your original design value, and the value calculated in step 3.