ENEE 307: Lab 2 Upgrade, Fall 2022

1) Design and simulate in CoolSPICE a CE amplifier similar to that in Figure 2.7 using a PNP transistor 2N3906. You will have to change the polarities of your connections. See if you can design it to have a small signal gain of 12V/V. What happens to the gain if you attach a load 10K resistor after the output capacitor, between the capacitor and ground? Discuss the operation of the amplifier describing the DC bias and the AC gain, and how it differs from the NPN transistor circuit in Figure 2.7

2) Design and simulate an EF amplifier similar to that in Figure 2.12 using a PNP transistor 2N3906. What is the AC gain, and what happens to the gain when you apply at 10K load resistor after the output capacitor, between the output capacitor and ground? Discuss the operation of the amplifier describing the DC bias and the AC gain, and how it differs from the NPN transistor circuit in Figure 2.12. Note that the EF amplifier is a buffer-type amplifier. It has a gain of only about 1, but it can drive a load resistor without suffering from reduced gain.