Lab 12 Class C Amplifiers

1. Assemble the following circuit in Fig. 1

2. Place channel 1 of the oscilloscope at the input to the capacitor to see V_{IN}. Then move channel 1 to the other side of the capacitor or V_B which is the base of the transistor to see the effect of clamping. (The oscilloscope coupling should be DC.)

3. Place channel 2 of the oscilloscope to Vout.

4. Sketch to input and the output signals in Fig. 2.
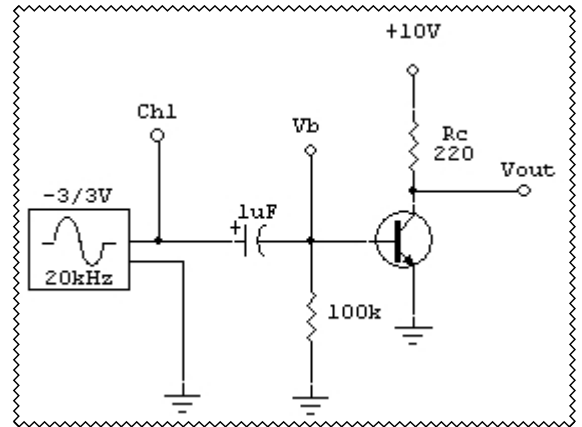
5. Is the transistor on or off?

Fig.1
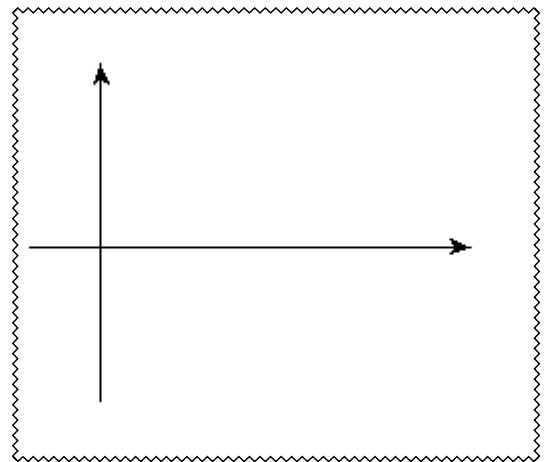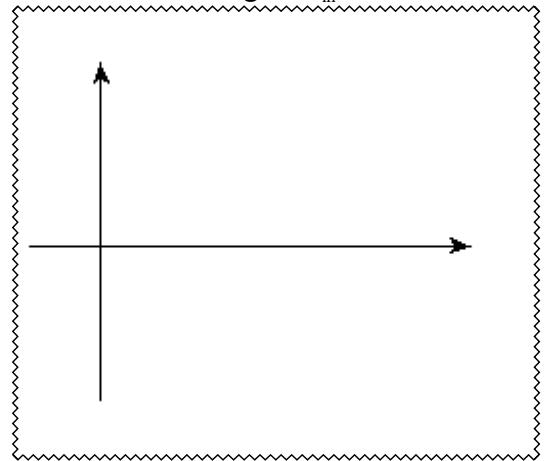

Fig. 2 V_{in}

Fig. 2 V_{OUT}

6. Assemble the circuit in Fig. 3:

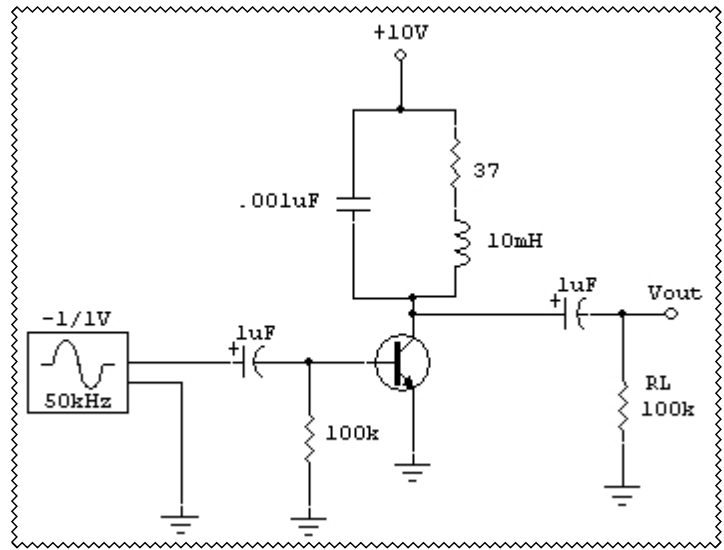7. Calculate the resonant frequency:

8. Calculate the bandwidth:

Fig. 3

9. Adjust the signal generator for a maximum output. (Let this be the "center frequency".)

10. Increase the frequency until the output drops to .707 of the maximum output. (Let this be the high corner frequency F_H.)

11. Return to the center frequency and then lower the frequency until the output drops to .707 of the maximum output. (Let this be the low corner frequency F_L.)

12. Create a Bode plot in Fig. 4 and indicate the corner frequencies, maximum output and bandwidth.
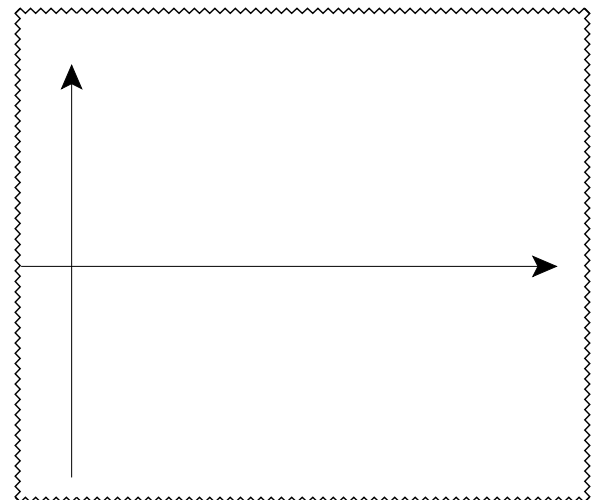

Fig. 4