Name: _____

Student No: _____

Electrical and Computer Engineering Department
University of Puerto Rico - Mayaguez, P.R.
Electronics II - Spring 1999 - Fourth Exam (A) - Prof. Manuel Toledo

1. Design a class B power amplifier capable of delivering 30 watts to a 10Ω load. Specify the voltage and current requirements for the power supply, and the power the transistors should be able to dissipate in order to handle output signals of various amplitudes. Draw the diagram of the circuit. (30 points)

2. Design a third order high-pass Butterworth filter with cutoff frequency of 5 kHz. How much will 500 Hz signals be attenuated by this filter? The third order Butterworth polinomial is $B_3(s) = (s+1)(s^2+s+1)$. Draw the circuit's schematic diagram. (30 points)

3. The following circuit is used as the phase-shifting network for a two-stage FET oscillator. Find the circuit's beta, $\beta(s) = \frac{v_f}{v_o}$. Determine the frequency of oscillation and the gain required from the amplifier. (30 points)