

**Electronic Media I  
Midterm Exam  
Fall, 1994**

**Use a separate sheet of paper for your answers.**

- 1) **20 pts.** Describe the relation between signal level, noise, and distortion in a tape studio.
- 2) **5 pts.** In a tape recorder's sync mode, which head is used for recording and which head is used for playback?
- 3) **10 pts.** Which kind of microphone is best-suited for close miking?  
Which kind of microphone requires external power?
- 4) **10 pts.** How are microphones and speakers related?
- 5) **10 pts.** What is the frequency of D above middle C?
- 6) **10 pts.** If a complex wave has a frequency of 2,000 Hz, what is the frequency of its 5th harmonic?
- 7) **10 pts.** If a sawtooth wave has an amplitude of 20V, what is the amplitude of its 4th harmonic?
- 8) **10 pts.** If a square wave has an amplitude of 20V, what is the amplitude of its 4th harmonic?
- 9) **10 pts.** A 600 Hz sine wave is sent to the 20/20 frequency shifter. If the modulation frequency is 100 Hz, what is the frequency of the first lower sideband of the output?
- 10) **20 pts.** In principle, how does the Lexicon Digital Delay affect the timbre of an input signal (do not describe all of the Lexicon's functions)?
- 11) **15 pts.** How does the B and K graphic equalizer affect the timbre of an input signal?
- 12) **20 pts.** How does the 20/20 frequency shifter affect the timbre of an input?