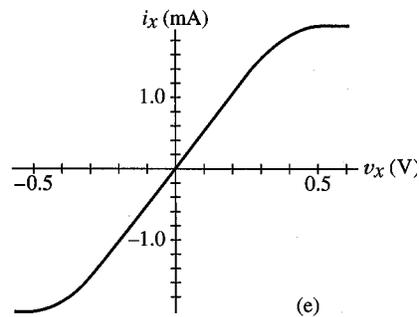
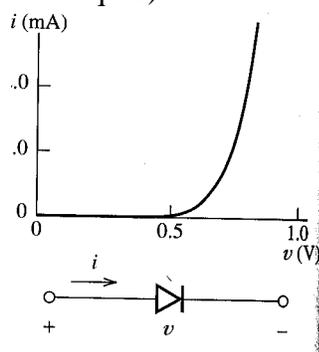


Name: _____ Section: _____

EE241: Electronics I
Problem Set 4
(Due 2/02/09)

These problems are based on Hambley, sections 3.1-3.3. Please complete the problems in pencil on engineering paper and attach them by staple to this cover sheet.

1. Problem 3.1
2. Problem 3.2
3. Problem 3.3
4. Problem 3.4
5. Problem 3.9. The device characteristics are repeated here for your use in applying the load lines. (Hint on parts b and c— use Thevenin to reduce the circuits before applying load line techniques).



6. Problem 3.15
7. Problem 3.16
8. Problem 3.19

The following problem is part of a two-part series to consider the design process for multistage circuits, following the “Anatomy of a Circuit Design” analysis of a function generator that follows Chapter 3 in your book.

9. Read pages 199 to 203. Then do the following:
 - In your own words, what does a function generator do? How are the function generators that we use in the lab powered? How do we use them?
 - Reproduce the system block diagram. Describe the function of each block.
 - Make a note of the circuit topology for the Schmitt trigger. What is the function of R_4 and the zener diodes in the Schmitt trigger circuit? What are the considerations in the choice of R_1 and R_2 ?
 - Make a note of the circuit topology for the integrator. How are R_5 and C_1 determined?
 - List two ways that the Schmitt Trigger and Integrator portions of the circuit be redesigned to create waveforms with peak amplitudes of approximately 10V.