ELEG 340: Solid-State Electronics, Fall 2008

Homework #12 (rev) - due Wednesday, 10 December 2008, at noon to the TA

1. Problem 6.13, p. 328 of Streetman-Banerjee, 6th edition.

2. Problem 6.19 (but no substrate bias), p. 329 of Streetman-Banerjee, 6th edition. Do not use substrate bias - assume that $V_{BS} = 0$ v.

3. Problem 6.20, p. 329 of Streetman-Banerjee, 6th edition.

4. Problem 6.21, p. 329 of Streetman-Banerjee, 6th edition. Hint: to assist you in selecting the correct equation for the drain current, note that for $V_G = 5$ volts and $V_D = 0.1$ volt, show (from V_{DG}) that the MOSFET is in the linear region; for $V_G = 3$ volts and $V_D = 5$ volt, show that the MOSFET is in the saturation region). Note added: assume that $d_i = 10$ nm, same as in problem 6.20 above.

Homework assignments will appear on the web at:
http://www.ece.udel.edu/~kolodzey/courses/eleg340f08.html

Note: On each homework and report submission, please give your name, the due date, assignment number and the course number.