

ELEG 340: Solid-State Electronics, Fall 2008

Homework #11 - due Tuesday, 2 December 2008, at the beginning of class

1. Problem 6.8, p. 327 of Streetman-Banerjee, 6th edition. Note, it may be written unclearly in the problem description, but be sure to calculate the insulator (or oxide) capacitance C_i (also known as C_{ox}), and the minimum capacitance C_{min} that occurs by including the series capacitance C_s of the semiconductor depletion layer (also called C_d) at its maximum width. In the “next” part, calculate the flat band voltage V_{FB} using eqn (6-37) and the data in Fig. 6-17.
2. Calculate the open channel conductance G_O for the transistor of problem 6.4, p. 327. Does the conductance of the open n-type channel include a contribution from the p-type gate region?

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.