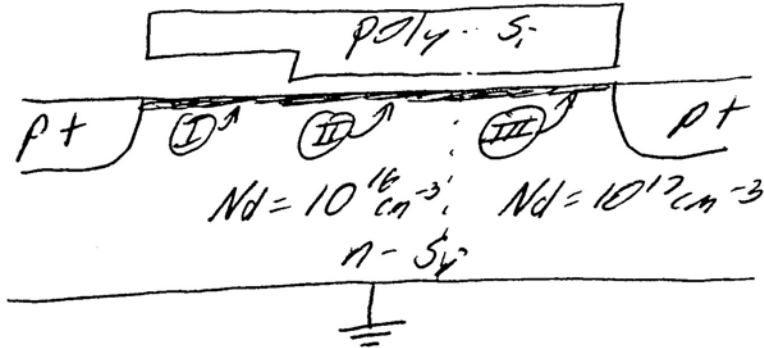


Recitation 11
EE 3161 – Spring 2008

- 1) For the MOS transistor drawn below, assume that the gate voltage is biased for inversion, and the labeled regions correspond to the inversion channel. What are the scattering mechanisms that affect region I? What are the relative sizes of the mobilities of regions I, II and III? In each case, state which type(s) of scattering cause the mobility to be different from that of the neighboring regions.



- 2) For the MOS transistor below,
- Draw the band diagram for the cross-section through the dotted line "a". What is the voltage dropped across the silicon? Across the oxide?
 - What is I_d for the voltages shown? (Hint: introduce a voltage V_{dy} at the interface between the two oxide thicknesses.)

