

Summer 2012

Ve320 Introduction to Semiconductor Device

Homework #7, due July 20, 2012 **before class**

Note: 1. homework can be submitted to my mail box.

1. RFP 14.2, Only work on combination B and E
2. For a *rectifying* M-S diode with the semiconductor being p-type, (a) Draw the energy band diagram, charge density, electric field, and potential (similar to Fig. 14.4 in RFP); (b) derive an expression for the depletion width with applied voltage  $V_A$  (similar to Eq. (14.12) in RFP).
3. What are the origins of junction capacitance and diffusion capacitance?
4. RFP 10.4
5. RFP 10.9
6. RFP 11.8
7. RFP 11.9