Week 5 Quiz 1: Additional Information
ECE 606: Solid State Devices
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Purdue University, Spring 2013

Answer the four multiple choice questions below by choosing the one, best answer. Then ask a question about the lecture.

1) Given an energy band diagram, how do we find the electric field?
   a) It is proportional to $E_C$.
   b) It is proportional to minus $E_C$.
   c) It is proportional to the slope of $E_C$.
   d) It is proportional to minus the slope of $E_C$.
   e) It is proportional to the second derivative of $E_C$.

2) Given an energy band diagram, how do we find the electrostatic potential?
   a) It is proportional to $E_C$.
   b) It is proportional to minus $E_C$.
   c) It is proportional to the slope of $E_C$.
   d) It is proportional to minus the slope of $E_C$.
   e) It is proportional to the second derivative of $E_C$.

3) A donor atom used to dope silicon n-type comes from which column of the periodic table?
   a) II
   b) III
   c) IV
   d) V
   e) VI

4) What is an amphoteric dopant?
   a) A dopant that contributes two electrons to the conduction band
   b) A dopant that contributes two holes to the valence band
   c) A dopant that contributes an electron to the conduction band AND a hole to the valence band
   d) A dopant with an energy level near the middle of the bandgap
   e) A dopant that can act as either a donor or acceptor depending on which lattice site it occupies.
Week 5 Quiz 1: (cont.)

5) What question(s) do you have about this lecture?

Turn in to Ms. Wanda Dallinger, EE-326 before 4:30 PM Friday.