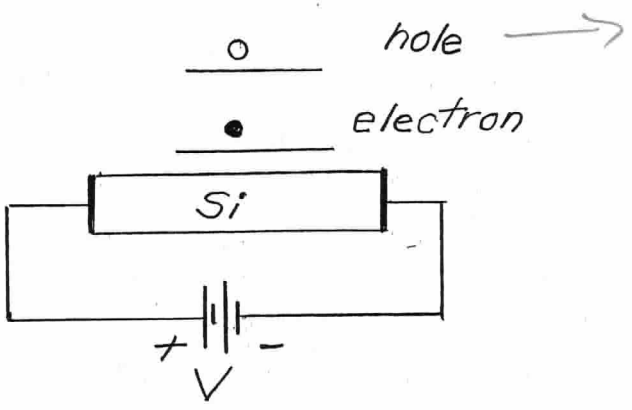
E E 311

Quiz 5 (10pts) Name _____

September 27, 2013 ID _____

1. A voltage is applied to a uniformly doped silicon crystal with both free electrons and free holes as shown below.

(2pts) a) On the diagram below indicate with arrows the direction of electron and hole flow.



(2pts) b) The drift velocity of the holes in the crystal above is (*greater than, less than, equal to*) the drift velocity of the electrons.

2. A pure piece of silicon is doped with phosphorous atoms:

(2pts) a) The majority carries in the doped semiconductor are *(electrons, holes).*

(2pts) b) The minority carrier concentration is *(greater than, less than, equal to)* to the intrinsic concentration.

(2pts) c) The doping atoms are referred to as *(acceptors, donors).*

(2pts) 3. I enjoy learning about semiconductor and devices physics *(yes, no).*