



(8)3. A diode is constructed by silicon doped with phosphorus in contact with silicon doped with aluminum.

a. Which semiconductor is the p-type junction? Circle your answer.

*(silicon doped with phosphorus / silicon doped with aluminum)*

b. Which semiconductor has partially filled conduction bands? Circle your answer.

*(silicon doped with phosphorus / silicon doped with aluminum)*

c. Which semiconductor has partially filled valence bands? Circle your answer.

*(silicon doped with phosphorus / silicon doped with aluminum)*

d. Which semiconductor should be connected to the negative electrode of a battery? Circle your answer.

*(silicon doped with phosphorus / silicon doped with aluminum)*

e. Another diode is constructed by germanium doped with arsenic in contact with germanium doped with gallium. When connected to a battery, which LED will emit light of shorter wavelength? Circle your answer.

*(the LED with the silicon diode / the LED with the germanium diode)*