CSCI 313 — Fall 2014

Homework 1

Due Tuesday, 9 September, 2014

6 Points

Part 1. Electronic devices such as diodes, transistors, and integrated circuits are often referred to as semiconductor devices. Why are they called semiconductors?

They are called semiconductors because they use semicondoctors materials like silicon for their main part . A semicondoctor material is a material that allows only a small flow of energy to go by in their pure state. Practicaly, resembling the proprety of an insulator . However, the flow of energy can be increased by adding (dopping) other substances, for example phosfores. Phosporeus has 5 electrons in is aouther shell vs. the four of the silicon, and their for, creating a surplus of electrons, and by fact, increasing the electron flow. Other ways to increase the enegy flow thrue a semicondoctor device is exposure to light , or with an eletric field.

Part 2. Computer chips are called integrated circuits. What does the word integrated mean

as it is used in this term?

Integrated referes that the chip incorporates many, which can be thousads to millions , simples eletronic parts such as: transistors, diodes, resistance etc.

Part 3. Many modern electronic devices such as cell phones, audio devices, image devices, and

video devices are called digital devices. What makes them digital?

What makes them digital is the use of logic gates. Logic gates are eletronic circutes that emulate the behavior of boolean functions, such as AND, OR, and NOR, returning results of true or false. These results can be rapresented in a matematical binary system made of 1 and 0; usualy, 1 stands for true and 0 for false. Their creating a digital system that can make calculations to perform tasks.

Part 4. What resources did you use to answer these questions? How did you find these resources?

I used italian wikipedia and youtube.