EECS 42 Intro. electronics for CS Fall 2001

Lecture 2: 8/29/01 A.R. Neureuther

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Electrical Quantities

A)CurrentB) VoltageC) Power

Reading: Schwarz and Oldham 1.1

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Summary

- Charge on an electron is $-1.6 \ 10^{-19}$ Coulombs
- Current is charge per unit time = (charge per particle) x (number of particles in motion) x (velocity)
- Current flows in a closed loop
- Voltage is the potential energy per unit charge
- Labeling convention $V_{AB} = V_A V_B$
- One node can be chosen as a reference with voltage of zero
- Energy is $E_{AB} = V_A Q V_B Q = V_{AB} Q$ where Q is the charge
- Power is the time rate of change of energy
- Resistance is voltage divided by current