**Current Electricity**

**Electric current** (***I*** ):

Electric Current is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Like how a river current is the amount of water to flow past one point, an electric current is the amount of charge to flow past one point.

**Current Law:**

We can use the following relation to calculate the current flowing through a wire:



Where *I* is *current* *(A)*, *Q* is *charge (C)*, and *t* is *time (s)*.

Example Questions:

1. 14 *C* of charge takes 4 seconds to pass by a point in a conductor. What is the electric current in the conductor?

2. 0.04 A of current is flowing through a conductor.

a) How much charge is passing by one point in the conductor every second?

b) How many electrons are passing by that point in each second? Remember there are 6.25\*10^18 electrons in one coulomb

**Electron Flow and Conventional Current**

When the study of electricity was young Benjamin Franklin set the standard charges of positive and negative (initially as excess and deficit of charge). Not until far later in time, after these conventions were set in place, we discovered that current of charges actually go in the opposite direction of what we originally thought!

Electrons Flow from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ towards \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Conventional Current from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ towards \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**DC Current:**

**AC Current:**

**Series and Parallel Circuits**

A series circuit is when devices (like light bulbs) are connected in a direct row or sequence. The current flows first through each device in a sequence.

Eg:

A parallel circuit is when devices (like light bulbs) are connected in a way that the current will split up and flow through both of the devices.

Eg:

**Ammeters:**

Homework: RC p.285 #1-5