CSC 7011: Computer Engineering, Fall 2014
HW Submission #1
Author: Tawheed Abdul-Raheem

1. 100 microCoulombs of charge flows through a device in 25 milliseconds.How much current is flowing through the device?

$$I = \frac{Q}{T}$$
$$I = \frac{100\, microCoulombs}{25\, milliseconds}$$
$$I = \frac{0.0001}{0.025}$$
$$I = 2.5 * 10^{-06}$$

2. If 50 milliAmperes of current is continuously flowing through a device, how much charge passes through the device in 200 microseconds?

$$50\, milliAmpere = \frac{Q}{200\, microseconds}$$
$$0.05 * 0.0002 = Q$$
$$1 * 10^{-05} = Q$$

3. How much energy does 50 milliCoulombs of charge have when it flows out of a 1.5 Volt battery?

$$V = \frac{W}{Q}$$
$$1.5 = \frac{W}{50\, milliCoulombs}$$
$$1.5 * .05\, coulombs = W$$
$$.075 = W$$

4. If a device uses 20 milliJoules of energy in 100 milliseconds, how much power does the device dissipate?

5. f a particular battery has a capacity of 250 milliAmperehours, how much charge is stored by the battery?