## **RC Circuit**

au = time constant, amount of time for q to reach 63.2% of  $\varepsilon C$ 

$$q_{\max} = \varepsilon C$$

$$i_{\max} = \frac{\varepsilon}{R}$$

$$\tau = RC$$

## Equations $q = Q_0 e^{-t/RC}$

$$q = Q_0 e^{-t/Rt}$$

$$i = \frac{\varepsilon}{R} e^{-t/\tau}$$

$$\begin{aligned} \mathbf{Charging} \\ q &= \varepsilon C \big( 1 - e^{-t/\tau} \big) \end{aligned}$$

## Discharging $q = \varepsilon C e^{-t/\tau}$

$$q = \varepsilon C e^{-t/c}$$