

charge: $Q(t) = Q_0(1 - e^{-t/2})$

$$Q_0 = 20C$$

a.) Current:

$$I(t) = \frac{dQ}{dt} = \frac{d}{dt} \{ Q_0 - Q_0 e^{-t/2} \}$$

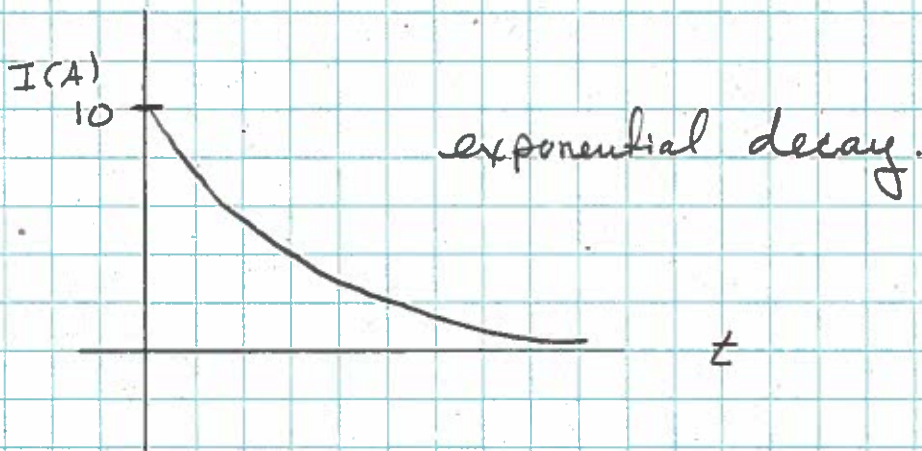
$$= 0 - Q_0 \left(-\frac{1}{2}\right) e^{-t/2}$$

$$I(t) = \frac{Q_0}{2} e^{-t/2} = \underline{\underline{10 e^{-t/2} A}}$$

b & c.) for $t=0, I(0) = 10A$
 $t \rightarrow \infty, I(\infty) \rightarrow 0$

So $I_{max} = I(0) = 10A$

and,



What kind of device is this?