

- a) Energy stored on a heart defibrillator capacitor
 $C = 10.0 \mu\text{F}$ $V = 9.00 \times 10^3 \text{V}$

Energy is equal to

$$U_c = \frac{1}{2} CV^2 = \frac{1}{2} (10.0 \times 10^{-6} \text{F}) (9.00 \times 10^3 \text{V})^2$$

$$U_c = 405 \text{ J}$$

- b) Find the amount of stored charge.

$$\text{From } C = \frac{Q}{V} \rightarrow Q = C \cdot V$$

$$\text{Then } Q = (10.0 \times 10^{-6} \text{F}) (9.00 \times 10^3 \text{V})$$

$$Q = 0.090 \text{ C}$$