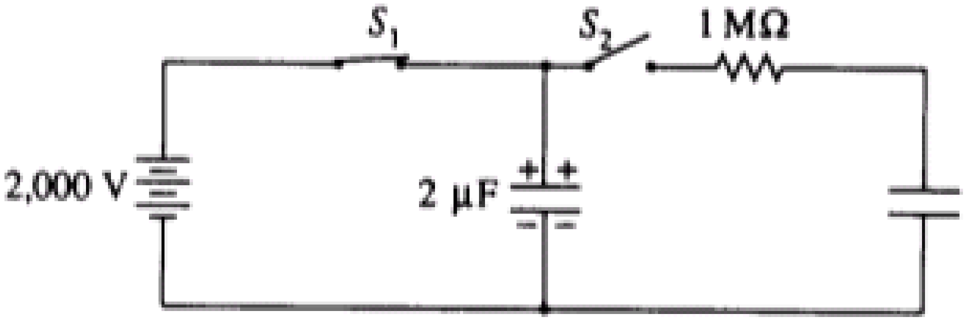


$6\ \mu F = 6 \times 10^{-6}\ \frac{C^2}{J}$

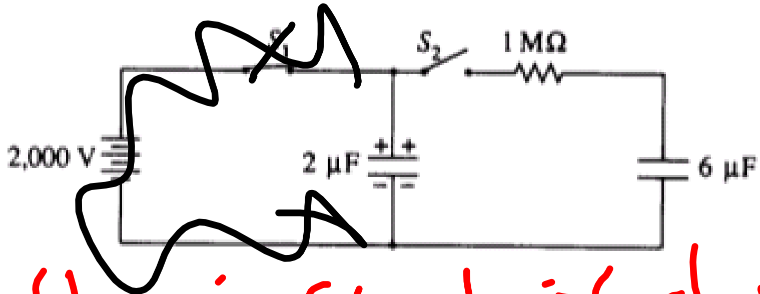
$Q = VC$

$C = \frac{Q}{V}$

$U = \frac{1}{2} QV$

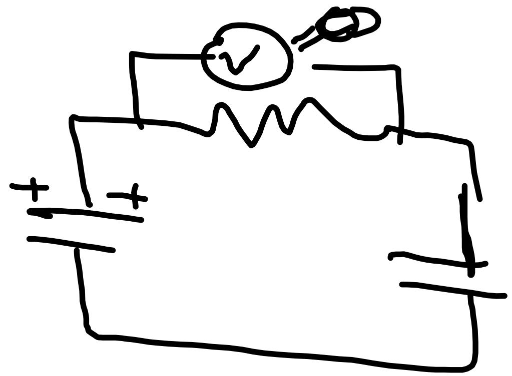
$= \frac{1}{2} CV^2$

b) $V = IR$



Since it is the instant it closes

2000V on Capacitor $= I(1M\Omega)$



$$V_{2\mu F} = V_{6\mu F}$$

$$\frac{Q_{2\mu F}}{C_2} = \frac{Q_6}{C_6}$$

$$Q_2 C_6 = Q_6 C_2$$

$$Q_2 = Q_6 \frac{2\mu F}{6\mu F}$$

$$3 Q_2 = Q_6$$

$Q = 4\times 10^{-3}\,C$

By cons. of charge

$$Q_2 + Q_6 = Q$$

$$Q_2 + 3Q_2 = 4\times 10^{-3}\,C$$

$$Q_2 = 1\times 10^{-3}\,C$$

$$Q_6 = 3\times 10^{-3}\,C$$

(d)

$$U = \frac{1}{2} QV \qquad Q = VC, \quad V = \frac{Q}{C}$$

$$U = \frac{1}{2}\frac{Q_2^2}{C_2} + \frac{1}{2}\frac{Q_6^2}{C_6}$$

$$= \frac{1}{2}\left[\frac{(1\times10^{-3}\,C)^2}{2\times10^{-6}\,F} + \frac{(3\times10^{-3}\,C)^2}{6\times10^{-6}\,F}\right]$$

$$=$$