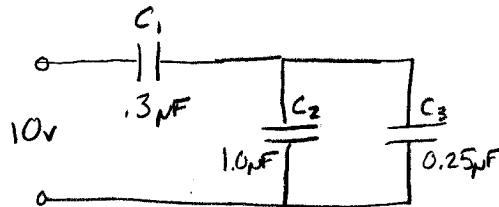


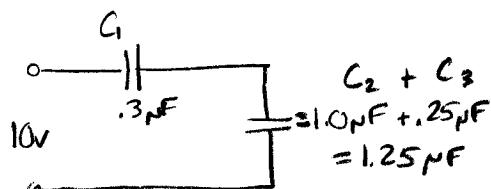
24-34

GIVEN:



FIND:

$$C_{eq}, Q_1, Q_2, Q_3, V_1, V_2, V_3, U$$



$$\frac{1}{C_{eq}} = \frac{1}{0.3\mu F} + \frac{1}{1.25\mu F}$$

$$C_{eq} = 0.242\mu F$$

$$Q_{tot} = C_{eq}V = (0.242\mu F)(10V) = 2.42\mu C = Q_1$$

$$V_1 = \frac{Q_1}{C_1} = \frac{2.42\mu C}{0.3\mu F} = 8.07V$$

$$V_2 = V_3 = 10V - 8.07 = 1.93V = V_3$$

$$Q_2 = C_2 V_2 = (1.0\mu F)(1.93V) = 1.93\mu C$$

$$Q_3 = C_3 V_3 = (0.25\mu F)(1.93V) = 0.48\mu C$$

$$U = \frac{1}{2} C_{eq} V^2 = \frac{1}{2} (0.242\mu F) (10V)^2 = 12.1\mu J$$