

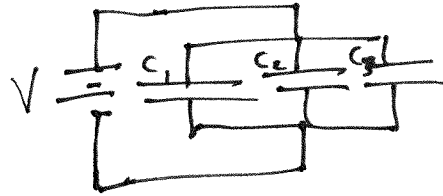
Ch. 8 Prob. 32

$$C_1 = 2.0 \mu\text{F}$$

$$C_2 = 3.0 \mu\text{F}$$

Connected in parallel $C_3 = 6.0 \mu\text{F}$

$$\begin{aligned} C_T &= C_1 + C_2 + C_3 \\ &= (2.0 + 3.0 + 6.0) \mu\text{F} \\ &= 11.0 \mu\text{F} \end{aligned}$$



$$V = 500\text{V}$$

Since the capacitors are all in parallel,
The voltage across each capacitor is 500V.

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

for each
capacitor

$$V_1 = 500\text{V} \quad Q_1 = C_1 \cdot V_1 = (2.0 \mu\text{F})(500\text{V}) = 1000 \mu\text{C}$$

$Q_1 = 1.0 \text{ mC}$

$$V_2 = 500\text{V} \quad Q_2 = C_2 \cdot V_2 = (3.0 \mu\text{F})(500\text{V}) = 1500 \mu\text{C}$$

$Q_2 = 1.5 \text{ mC}$

$$V_3 = 500\text{V} \quad Q_3 = C_3 \cdot V_3 = (6.0 \mu\text{F})(500\text{V}) = 3000 \mu\text{C}$$

$Q_3 = 3.0 \text{ mC}$