

P # 35

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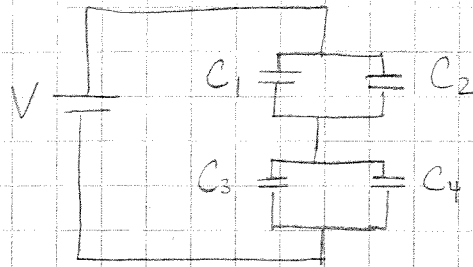
$V_{eq} = 24 \text{ V}$

$C_1 = 1 \mu\text{F}$

$C_2 = 5 \mu\text{F}$

$C_3 = 8 \mu\text{F}$

$C_4 = 4 \mu\text{F}$



$C_{12} = C_1 + C_2 = 1 \mu\text{F} + 5 \mu\text{F}$
 $C_{12} = 6 \mu\text{F}$

$C_{34} = C_3 + C_4 = 8 \mu\text{F} + 4 \mu\text{F}$
 $C_{34} = 12 \mu\text{F}$

$C_{eq}^{-1} = C_{12}^{-1} + C_{34}^{-1}$

$C_{eq}^{-1} = 6 \mu\text{F}^{-1} + 12 \mu\text{F}^{-1}$

$C_{eq} = 4 \mu\text{F}$

$Q_{eq} = Q_{12} = Q_{34}$ and $Q_{eq} = C_{eq} \cdot V_{eq}$

$= (4 \mu\text{F})(24 \text{ V})$

$Q_{eq} = Q_{12} = Q_{34} = 96 \mu\text{C}$

$Q_{12} = C_{12} \cdot V_{12}$

$96 \mu\text{C} = (6 \mu\text{F}) \cdot V_{12}$

$V_{12} = 16 \text{ V} = V_1 = V_2$

$Q_1 = C_1 \cdot V_1$
 $= (1 \mu\text{F})(16 \text{ V})$

$Q_1 = 16 \mu\text{C}$

$Q_2 = C_2 \cdot V_2$
 $= (5 \mu\text{F})(16 \text{ V})$

$Q_2 = 80 \mu\text{C}$

$Q_{34} = C_{34} \cdot V_{34}$

$96 \mu\text{C} = (12 \mu\text{F}) \cdot V_{34}$

$V_{34} = 8 \text{ V} = V_3 = V_4$

$Q_3 = C_3 \cdot V_3$
 $= (8 \mu\text{F})(8 \text{ V})$

$Q_3 = 64 \mu\text{C}$

$Q_4 = C_4 \cdot V_4$
 $= (4 \mu\text{F})(8 \text{ V})$

$Q_4 = 32 \mu\text{C}$