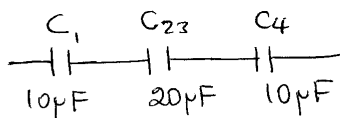


Physics 102 Rec
Quiz #7
Chapter 26

Name: Key Id#: _____ Sect#: _____

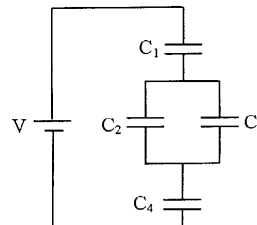
In the figure, the battery has a potential difference of 20 V and the four capacitors each having a capacitance of $10\ \mu\text{F}$.

(a) What is the equivalent capacitance?



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

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



(b) What is the charge across the capacitor C_2 ?

$$q_{eq} = C_{eq} V = 4\ \mu\text{F} \times 20\text{V} = 80\ \mu\text{C}$$

$$\Rightarrow q_{23} = 80\ \mu\text{C} \Rightarrow V_{23} = \frac{q_{23}}{C_{23}} = \frac{80\ \mu\text{C}}{20\ \mu\text{F}} = 4\text{V}$$

$$\Rightarrow V_2 = 4\text{V} \Rightarrow q_2 = C_2 V_2 = 10\ \mu\text{F} \times 4\text{V} = \boxed{40\ \mu\text{C}}$$