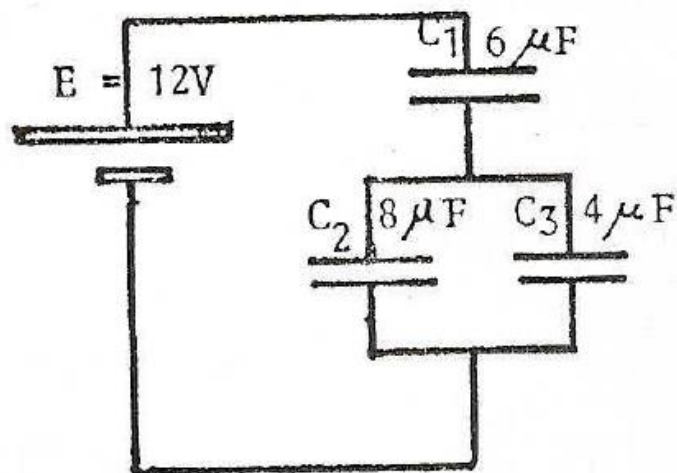
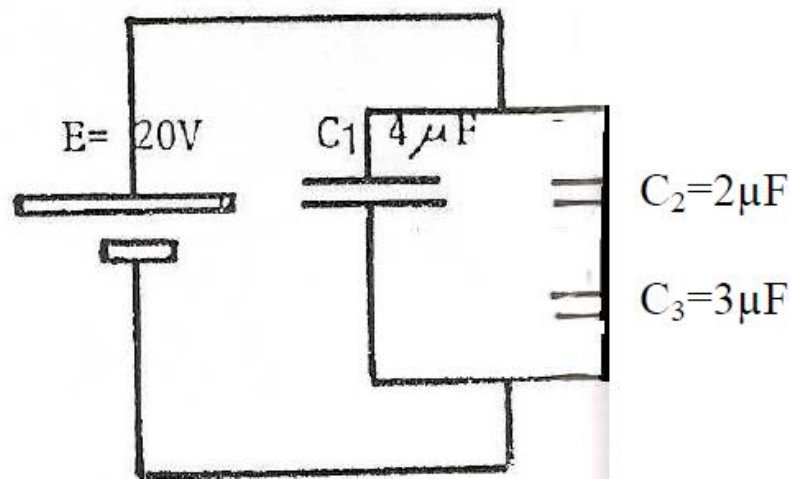


7. En cada una de las conexiones que se indican en la figura, calcular la energía almacenada en cada condensador y la energía total del sistema.

a)



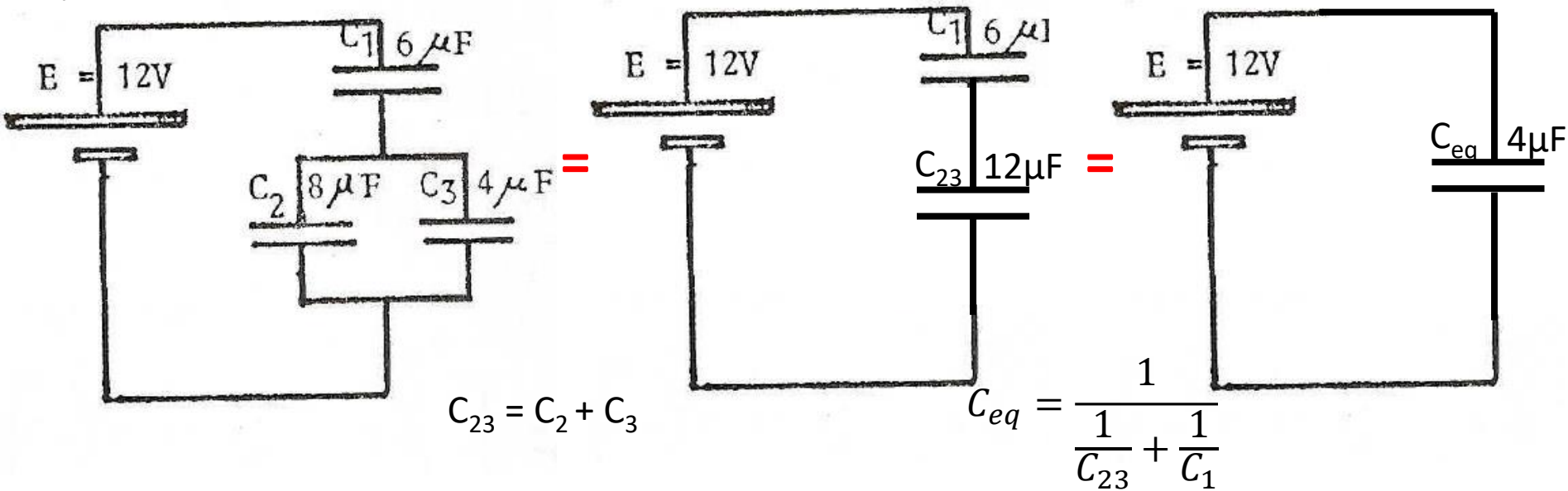
b)



$$U = \frac{1}{2} * C * V^2 = \frac{1}{2} * Q * V = \frac{1}{2} * \frac{Q^2}{C}$$

Energía potencial almacenada en un capacitor

a)



$$Q = C_{eq} * V = 4\mu\text{F} * 12\text{V} = 48\mu\text{C}$$

$$V_1 = Q / C_1 = 48 * 10^{-6} \text{C} / (6 * 10^{-6}) \text{F} = \mathbf{8\text{V}}$$

$$V_{23} = V_2 = V_3 = Q / C_{23} = 48 * 10^{-6} \text{C} / (12 * 10^{-6}) \text{F} = \mathbf{4\text{V}}$$

$$U_1 = \frac{1}{2} * C_1 * V_1^2 = \frac{1}{2} * 6 * 10^{-6} \text{F} * (8\text{V})^2 = \mathbf{0,19\text{mJ}}$$

$$U_2 = \frac{1}{2} * C_2 * V_2^2 = \frac{1}{2} * 8 * 10^{-6} \text{F} * (4\text{V})^2 = \mathbf{0,06\text{mJ}}$$

$$U_3 = \frac{1}{2} * C_3 * V_3^2 = \frac{1}{2} * 4 * 10^{-6} \text{F} * (4\text{V})^2 = \mathbf{0,03\text{mJ}}$$

$$U_{total} = \frac{1}{2} * C_{eq} * V^2 = \frac{1}{2} * 4 * 10^{-6} \text{F} * (12\text{V})^2 = \mathbf{0,29\text{mJ}}$$