01. Se:

$C = \frac{Q}{U}$

$C = \frac{72}{12}$

$\boxed{C = 6\ \mu F}$

Resposta: E

02.

$Q = C \cdot U \Rightarrow Q = \varepsilon_o \cdot \frac{A}{d} \cdot U \quad (1)$

$Q' = C' \cdot U \Rightarrow Q' = \varepsilon_o \cdot \frac{A}{d'} \cdot U \quad (2)$

$(2) \div (1): \frac{Q'}{Q} = \frac{d}{d'} \Rightarrow \frac{Q'}{6\ \mu C} = \frac{0{,}3\ mm}{0{,}4\ mm} \Rightarrow \boxed{Q' = 4{,}5\ \mu C}$

Resposta: B

03. Temos:

$\varepsilon = R_{eq} \cdot i \Rightarrow 27 = 9 \cdot i \Rightarrow \boxed{i = 3\ A}$

Logo:

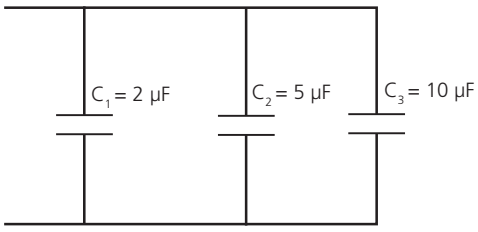
$U = R \cdot i \Rightarrow U_{AB} = 3 \cdot 3 \Rightarrow \boxed{U_{AB} = 9\ V}$

Assim:

$C = \frac{Q}{U_{AB}} \Rightarrow 5 = \frac{Q}{9} \Rightarrow \boxed{Q = 45\ \mu C}$

Resposta: E

04.



$C_1 = \frac{Q_1}{U_1} \qquad C_2 = \frac{Q_2}{U_2}$

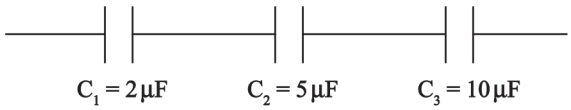
$2\ \mu = \frac{Q_1}{8} \qquad 5\ \mu = \frac{Q_2}{8}$

$\boxed{Q_1 = 16\ \mu C} \qquad \boxed{Q_2 = 40\ \mu C}$

$C_3 = \frac{Q_3}{U_3} \Rightarrow 10\ \mu = \frac{Q_3}{8} \Rightarrow \boxed{Q_3 = 80\ \mu C}$

Resposta: A

05.



$$\frac{1}{C_{eq}} = \frac{1}{2} + \frac{1}{5} + \frac{1}{10}$$

$$\frac{1}{C_{eq}} = \frac{5+2+1}{10}$$

$$8\,C_{eq} = 10$$

$$\boxed{C_{eq} = \frac{5}{4}\ \mu F}$$

$$C_{eq} = \frac{Q_{eq}}{U}$$

$$\frac{5}{4} = \frac{Q_{eq}}{8}$$

$$\boxed{Q_{eq} = 10\ \mu C} \begin{cases} Q_1 = 10\ \mu C \\ Q_2 = 10\ \mu C \\ Q_3 = 10\ \mu C \end{cases}$$

Logo,

$$C_1 = \frac{Q_1}{U_1} \qquad 2 = \frac{10}{U_1} \qquad \boxed{U_1 = 5\ V}$$

$$C_2 = \frac{Q_2}{U_2} \qquad 5 = \frac{10}{U_2} \qquad \boxed{U_2 = 2\ V}$$

$$C_3 = \frac{Q_3}{U_3} \qquad 10 = \frac{10}{U_3} \qquad \boxed{U_3 = 1\ V}$$

Resposta: A