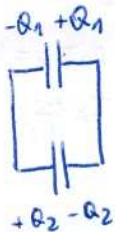


INFO

1)
17.14.
A



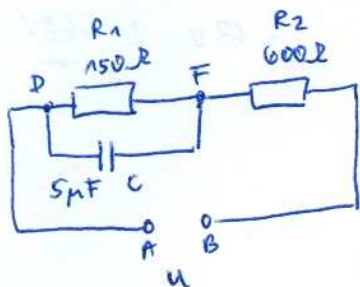
$$Q_1 = C \cdot U_1$$

$$Q_2 = C \cdot U_2$$

negatívold töltség: $Q = Q_2 - Q_1 = (U_2 - U_1) \cdot C$

$$U = \frac{Q}{C_{\text{er}}} = \frac{(U_2 - U_1) \cdot C}{2 \cdot C} = \frac{120 - 100}{2} = \underline{\underline{10V}}$$

2)
18.16.
C



minten a kondenzátor feltöltődött, nem fogja az az olyan áram → a ter most a 2 soros kapacitással ellenállás

$$I = \frac{U}{R_1 + R_2}$$

$$U_{DF} : R_1 \text{ ellenállás sőt fesz} = I \cdot R_1 = \frac{R_1 \cdot U}{R_1 + R_2}$$

$$Q = C \cdot U_{DF} = C \cdot \frac{R_1 \cdot U}{R_1 + R_2} = \underline{\underline{3 \cdot 10^{-4} C}}$$

3)
18.9.
A

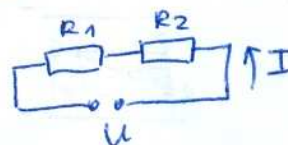
$$R_1 = 40 \Omega \quad P_1 = 16W$$

$$R_2 = 40 \Omega \quad P_2 = 16W$$

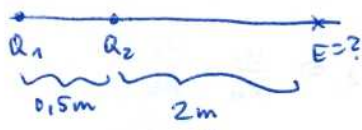
Az összes ellenállásnak lehetne max. teljesítmény:

$$P = U \cdot I = I^2 \cdot R \quad I_{1,2} = \sqrt{\frac{P_{1,2}}{R_{1,2}}} \rightarrow \begin{cases} 0,102 A \\ 0,063 A \end{cases}$$

$$U_{\text{max}} = I_{\text{max}} \cdot \underbrace{(R_1 + R_2)}_{R_{\text{eredet}}} = \underline{\underline{880V}}$$



4)
17.5.
D



$$Q_1 = 2 \cdot 10^{-6} C$$

$$Q_2 = -4 \cdot 10^{-6} C$$

$$E = 9 \cdot 10^9 \frac{Nm^2}{C^2}$$

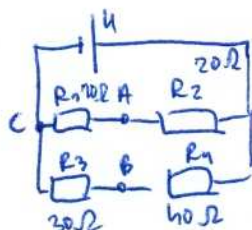
$$E(P) = k \left[\frac{Q_1}{r_1^2} + \frac{Q_2}{r_2^2} \right] = 9 \cdot 10^9 \frac{Nm^2}{C^2} \left[\frac{2 \cdot 10^{-6}}{2,5^2} - \frac{4 \cdot 10^{-6}}{2^2} \right]$$

$$= 9 \cdot 10^3 \left[\frac{2}{2,5^2} - \frac{4}{4} \right] \frac{N}{C} = \underline{\underline{-6120 \frac{N}{C}}}$$

$$|E(P)| = 6120 \frac{N}{C}$$

5)
11/12

B



$$U_A = U \cdot \frac{R_1}{R_1 + R_2}$$

$$U_{CB} = U \cdot \frac{R_3}{R_3 + R_4}$$

$$U_{AB} = U_{CB} - U_{CA} = U \left[\frac{R_3}{R_3 + R_4} - \frac{R_1}{R_1 + R_2} \right] = 100 \left[\frac{30}{70} - \frac{10}{30} \right] = \underline{\underline{9,52 V}}$$