Универзитет у Источном Сарајеву
Електротехнички факултет

ИСПИТ ИЗ ОСНОВА ЕЛЕКТРОТЕХНИКЕ 1

09. 02. 2015. - Рјешења

1.

а) $Q_B = 2\sqrt{2}Q_A$ и $Q_C = -Q_A$.

б) $A = -0{,}18$ pJ.

2.

$$\frac{U_{AB}}{U_{AC}} = 1.$$

3.

а) $U_{\max} = 1620$ V.

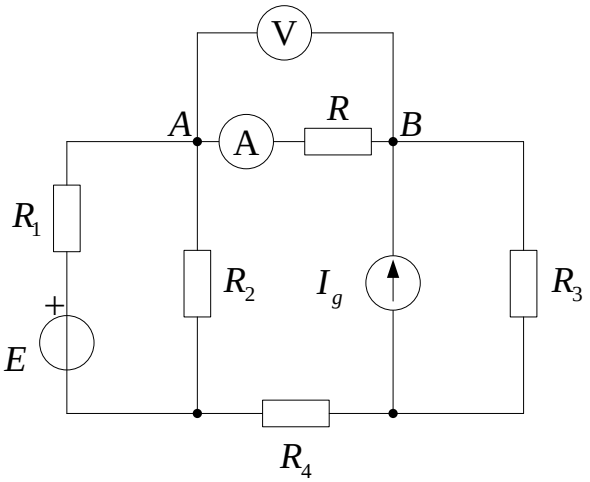
б) $Q_{\max} \approx 18$ nC.

в) $\sigma_1 \approx 2{,}87\ \frac{\mu\text{C}}{\text{m}^2},\ \sigma_2 \approx 25{,}81\ \frac{\mu\text{C}}{\text{m}^2},\ \sigma_1' \approx -0{,}72\ \frac{\mu\text{C}}{\text{m}^2},\ \sigma_2' \approx -6{,}45\ \frac{\mu\text{C}}{\text{m}^2},$

$\sigma_{p1} = 0,\ \sigma_{p2} \approx -22{,}94\ \frac{\mu\text{C}}{\text{m}^2},\ \sigma_{p1}' = 0,\ \sigma_{p2}' \approx 5{,}73\ \frac{\mu\text{C}}{\text{m}^2},$

4.

а)



б) $I_{Ai} = 8$ mA. $U_{Vi} = 160$ V.

в) $I_{Ar} \approx 24$ mA. $U_{Vr} \approx 480$ V.

5.

$$I_x = \frac{E}{R_x + R}.$$

6.

$q_1 = 6$ μC.
$q_2 = -0,5$ μC.