



ИСПИТ ИЗ ОСНОВА ЕЛЕКТРОТЕХНИКЕ 1

15. 06. 2018. - Рјешења

1.

$$V_M \approx -540 \text{ V},$$

$$\left(r_1 = \frac{10}{3} \text{ cm}, \quad r_2 = \frac{5}{3} \text{ cm} \right) \quad \text{и} \quad (r_1 = 10 \text{ cm}, \quad r_2 = 5 \text{ cm}).$$

2.

$$\text{a)} \quad Q' = 7,25 \text{ n} \frac{\text{C}}{\text{m}},$$

$$\text{б)} \quad \vec{F}_{\Delta Q_p} \approx -338,9 \vec{i}_y \text{ pN}.$$

3.

$$\text{a)} \quad \sigma = 236 \frac{\text{nC}}{\text{m}^2}, \quad \sigma_{p1} = -177 \frac{\text{nC}}{\text{m}^2}, \quad \sigma_{p2} = 19,6 \frac{\text{nC}}{\text{m}^2},$$

$$\text{б)} \quad V_{\max} = 405 \text{ kV}.$$

4.

$$P_{Ig1} = 48 \text{ mW}.$$

5.

$$I_A^{(3)} = 3,213 \text{ A}.$$

6.

$$E = 2 \text{ V}, \quad P_{2R} = 2RI_{23}^2 = \frac{8}{3} \text{ W}, \quad P_2 = R_2 I_4^2 = \frac{1}{3} \text{ W}, \quad P_3 = RI_3^2 = \frac{1}{3} \text{ W}, \quad P_4 = R_4 I_{34}^2 = 5 \text{ W},$$

$$P_R = RI_g^2 = 12 \text{ W}, \quad P_E = EI_{23} = \frac{4}{3} \text{ W}, \quad P_E = EI_{24} = 2 \text{ W}, \quad P_{E2} = E_2 I_2 = 1 \text{ W}, \quad P_{E3} = E_3 I_3 = -\frac{4}{3} \text{ W},$$

$$P_{E1} = -E_1 I_{23} = -\frac{2}{3} \text{ W}, \quad P_{Ig} = 18 \text{ W}.$$