



ИСПИТ ИЗ ОСНОВА ЕЛЕКТРОТЕХНИКЕ 1

20. 10. 2016. - Рјешења

1.

a) $Q_f = -312 \text{ pC}$.

б) $\sigma' = -25,2 \frac{\text{nC}}{\text{m}^2}, \quad \sigma'' = 12,63 \frac{\text{nC}}{\text{m}^2}$.

в) $E_1 = \frac{\rho r}{3\epsilon_0}, \quad 0 < r < a,$

$$E_2 = \frac{\rho a^3}{3\epsilon_0 r^2}, \quad a < r < b.$$

г) $V_A = \frac{\rho a^2}{6\epsilon_0} \left(3 - \frac{2a}{b} - \frac{r^2}{a^2} \right), \quad 0 < r < a,$

$$V_B = \frac{\rho a^3}{3\epsilon_0} \left(\frac{1}{r} - \frac{1}{b} \right), \quad a < r < b,$$

$$V_C = 0, \quad b < r < c.$$

д) $\Delta V = -64 \text{ V}$

2.

a) $x = 6 \text{ cm}$.

б) $F_x = -35,4 \mu\text{N}$.

3.

a) $U_{C1}^{(0)} = 10 \text{ V}, \quad U_{C2}^{(0)} = 15 \text{ V}.$

б) $P_{13}^{(Z)} = 1,75 \text{ W}.$

4.

$$E_3 = 24 \text{ V}.$$