



ИСПИТ ИЗ ОСНОВА ЕЛЕКТРОТЕХНИКЕ 2

23. 04. 2014. - Рјешења

1.

$$\vec{F}'_{12} = -\left(\frac{\mu_0 I^2}{8\pi a} \ln 5\right) \vec{i} + \left(\frac{\mu_0 I^2}{4\pi a} \operatorname{arctg} 2\right) \vec{j}.$$

$$\vec{F}'_{12} = -\vec{F}'_{21}.$$

2.

a) $\Phi = 23,7 \text{ mTm}^2.$

б) $q = -190 \text{ }\mu\text{C}.$

3.

$$W'_m = \frac{\mu I^2}{4\pi(b^2 - a^2)} \left(\frac{b^2 - 3a^2}{4} + \frac{a^4}{b^2 - a^2} \ln \frac{b}{a} \right) \text{ J/m.}$$

$$L' = \frac{\mu}{2\pi(b^2 - a^2)} \left(\frac{b^2 - 3a^2}{4} + \frac{a^4}{b^2 - a^2} \ln \frac{b}{a} \right) \text{ H/m.}$$

4.

$$I_{A_2} = |I_{A_2}| = 2,06 \text{ A.}$$

5.

a) $P_1 = 4000 \text{ W}, Q_1 = 0,$

$$P_2 = 0, Q_2 = -5333 \text{ VAr},$$

$$P_3 = 2560 \text{ W}, Q_3 = 1920 \text{ VAr.}$$

б) $U_{CC'} = 676,64 \text{ V.}$