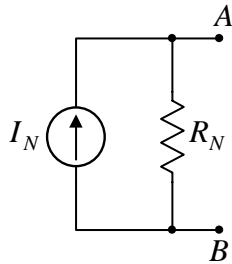


Osnovi elektronike SI

Rešenja zadataka – februar 2009.

2. zadatak

a) $I_N = -8,4 \text{ A}; \quad R_N = \frac{10}{7} \Omega;$



b) $I_X = -6 \text{ A}$

4. zadatak

$$\underline{U}_0 = (1 + j3) \text{ V} = \sqrt{10} \cdot e^{j71,57^\circ} \text{ V};$$

$$u_0(t) = 2\sqrt{5} \cos(314t + 71,57^\circ) \text{ V} = 4,472 \cos(314t + 71,57^\circ) \text{ V};$$

$$\underline{I}_0 = (-1 + j3,5) \text{ A} = \sqrt{13,25} \cdot e^{j105,95^\circ} \text{ A};$$

$$i_0(t) = \sqrt{26,5} \cos(314t + 105,95^\circ) \text{ A} = 5,148 \cos(314t + 105,95^\circ) \text{ A};$$

6. zadatak

$$v_I = -I_0 \cdot \frac{R_1 R_3}{R_2}$$

8. zadatak

a) $I_B = 9,684 \mu\text{A}; \quad I_C = 0,9684 \text{ mA}; \quad I_E = 0,978 \text{ mA}; \quad V_C = 10 \text{ V}; \quad V_E = 5,184 \text{ V}; \quad V_B = 5,884 \text{ V};$

b) $a_v = \frac{v_i}{v_g} = \frac{\frac{\beta_0 + 1}{r_\pi} \cdot R_E}{1 + \frac{\beta_0 + 1}{r_\pi} \cdot R_E} \approx 0,995;$

$$R_{ul} = R_1 \parallel R_2 \parallel (r_\pi + (1 + \beta_0)R_E) \approx 11,74 \text{ k}\Omega;$$

$$R_{izl} = R_E \parallel \frac{r_\pi}{\beta_0 + 1} \approx 26,19 \Omega.$$