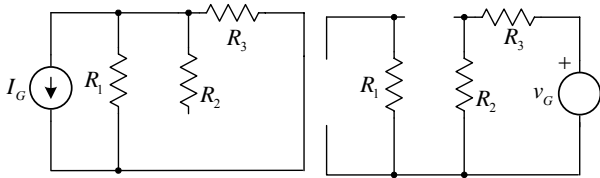


REŠENJA

1. Superpozicija:



$$\text{a) } v_G = (2\text{V}) \cdot \sin 2\omega_0 t \Rightarrow P_{VG} = \left(\frac{2\text{V}}{\sqrt{2}}\right)^2 \frac{1}{R_2 + R_3} = \frac{2}{R_2 + R_3} [\text{V}^2], \quad P_{IG} = I_G^2 (R_1 \parallel R_3) [\text{V}^2]$$

$$\text{b) } I_{R1} = I_G \frac{R_3}{R_3 + R_1}, \quad I_{R2} = \sqrt{2} \frac{1}{R_3 + R_2}$$

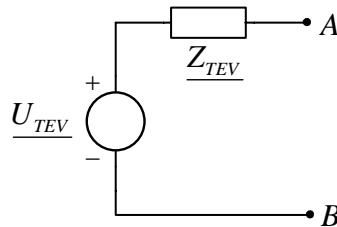
2.

$$\text{a) } I_B = \frac{V_{CC} - V_{BE} - V_D - (1 + \beta) I_B R_E}{R_B} \Rightarrow I_B = \frac{V_{CC} - V_{BE} - V_D}{R_B + (1 + \beta) R_E} = \frac{3.8\text{V}}{20\text{k}\Omega} = 0.19\text{mA}, \quad V_I = R_E \beta I_B \approx 1.9\text{V}$$

$$\text{b) } V_{CC\text{min}} = 2V\gamma = 1.2\text{V}$$

$$\text{3. a) } Z_{TEV} = (1 - j3)\Omega$$

$$U_{TEV} = (6 + j6)\text{V}$$



$$\text{b) } \underline{S} = 16 + j24; \quad P = 16\text{W}; \quad Q = 24\text{VAR}; \quad S = 8\sqrt{13}\text{VA} \approx 28,84\text{VA}; \quad \cos \phi = \frac{P}{S} = 0,555$$

$$\text{c) } R_p = 1\Omega; \quad L_p = 150\mu\text{H}$$

$$\text{4. } v_I = \begin{cases} 0; & 0\text{V} \leq v_G \leq 0.6\text{V} \\ \frac{1}{4}v_G - 0.15; & 0.6\text{V} \leq v_G \leq 3\text{V} \\ 0.6\text{V}; & 3\text{V} \leq v_G \leq 5\text{V} \end{cases}$$

