

REŠENJA ZADATAKA

1. a) $R_{E1} = 4,4\text{k}\Omega$; $R_{E3} = 5\text{k}\Omega$; $R_{C2} = 5,6\text{k}\Omega$; $R_{C1} = 1,12\text{k}\Omega$ $R_{E2} = 521,7\Omega$.

b) $R_i = R_{E3} \parallel \frac{r_{\pi 3} + R_{C2}}{\beta_0 + 1} = R_{E3} \parallel \frac{1}{g_{m3}} \approx 24,88\Omega$.

c) $v_{I(\min)} = V_{EE} = -5\text{V}$; (Q_3 na granici zakočenja)

$v_{I(\max)} = V_{CC} - I_{C2}R_{E2} - V_{ECS} - V_{BE} = 3,68\text{V}$; (Q_2 na granici zasićenja)

$V_I = 0$;

$V_{im\max} = \min\{v_{I(\max)} - V_I; V_I - v_{I(\min)}\} = 3,68\text{V}$

4.

$v_I[\text{V}] = V_D + |V_{BE}| = 1,4\text{V} = \text{const}$, za $-3\text{V} \leq v_G \leq -1,4\text{V}$ (IOP- lin. režim, D_1 -OFF, Q_1 -OFF, D_2 -ON, Q_2 -DAR);

$v_I[\text{V}] = -v_G[\text{V}]$, za $-1,4\text{V} \leq v_G \leq 1,4\text{V}$ (IOP-lin. režim, D_1 -OFF, Q_1 -OFF, D_2 -OFF, Q_2 -OFF);

$v_I[\text{V}] = -V_D - |V_{BE}| = -1,4\text{V} = \text{const}$, za $1,4\text{V} \leq v_G \leq 3\text{V}$ (IOP- lin. režim, D_1 -ON, Q_1 -DAR, D_2 -OFF, Q_2 -OFF).