

REŠENJA ZADATAKA

1. a) $I_{C1} \approx 0.5\text{mA}$; $I_{C2} \approx 0.5\text{mA}$, $V_I = 0$.

b) $a = \frac{v_i}{v_g} = -\frac{g_{m2}R_3}{1 + g_{m2}R_3} g_{m1} [R_1 \parallel (r_{\pi 2} + (\beta_0 + 1)R_3)] \approx -35.2$,

$$R_{ul} = r_{\pi 1} = 5\text{k}\Omega,$$

$$R_{izl} = R_3 \parallel \frac{r_{\pi 2} + R_1}{\beta_0 + 1} \approx 66\Omega.$$

c) $V_I = 0$;

$$v_{iMAX} \approx 0.886\text{V} \text{ (} Q_1 \text{ na granici zakočjenja); } v_{iMIN} = -1\text{V} \text{ (} Q_1 \text{ na granici zasićenja);}$$

$$V_{immax} = 0.886\text{V}.$$

4.

$$v_I[\text{V}] = 11.4\text{V}, \text{ za } -12\text{V} \leq v_G \leq -11.4\text{V} \text{ (IOP-poz. zasićenje, D-ON, Q-OFF);}$$

$$v_I[\text{V}] = -v_G[\text{V}], \text{ za } -11.4\text{V} \leq v_G \leq 0 \text{ (IOP-lin. režim, D-ON, Q-OFF);}$$

$$v_I[\text{V}] = -v_G[\text{V}], \text{ za } 0 \leq v_G \leq 11.4\text{V} \text{ (IOP-lin. režim, D-OFF, Q-DAR);}$$

$$v_I[\text{V}] = -11.4\text{V}, \text{ za } 11.4\text{V} \leq v_G \leq 12\text{V} \text{ (IOP-neg. zasićenje, D-OFF, Q-DAR).}$$

$$i_C[\text{mA}] = 0, \text{ za } -12\text{V} \leq v_G \leq 0;$$

$$i_C[\text{mA}] = 0.1v_G[\text{V}], \text{ za } 0 \leq v_G \leq 11.4\text{V};$$

$$i_C[\text{mA}] = 0.05v_G[\text{V}] + 0.57, \text{ za } 11.4\text{V} \leq v_G \leq 12\text{V}.$$