

REŠENJA ZADATAKA

$$1. a) a = \frac{v_p}{v_u} = \frac{g_m (R_D \parallel R_P)}{1 + g_m R_1} \approx 9.42.$$

$$b) R_{ul} = R_1 + \frac{1}{g_m} = 796.3\Omega; \quad R_{izl} = R_D = 10k\Omega.$$

$$c) V_{pm\max}^{(1)} = I_D \cdot (R_P \parallel R_D) = 2.25V \quad (M_1 \text{ na granici zakočjenja});$$
$$V_{pm\max}^{(2)} = |V_{TP}| - (V_{DD} + I_0 R_D) = 3V \quad (M_1 \text{ na granici triodne oblasti});$$
$$V_{pm\max} = 2.25V.$$

4.

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

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

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

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

$$i_B[\mu A] \approx -0.5v_G[V] + 5.7, \text{ za } -12V \leq v_G \leq -11.4V;$$

$$i_B[\mu A] = -v_G[V], \text{ za } -11.4V \leq v_G \leq 0;$$

$$i_B[\mu A] = 0, \text{ za } 0 \leq v_G \leq 12V.$$