REŠENJA ZADATAKA

1. a) $R_1 = 113\text{k}\Omega$; $R_2 = 7.78\text{k}\Omega$; $R_3 = 14.1\text{k}\Omega$; $R_4 = 1.2\text{k}\Omega$.

b) $a = \dfrac{v_i}{v_g} = \left[- g_{m1}\left(R_2 \parallel r_{\pi 2}\right)\right] \cdot \left[- g_{m2}\left(R_3 \parallel \left(r_{\pi 3} + \left(\beta_0 + 1\right)R_4\right)\right)\right] \cdot \dfrac{g_{m3}R_4}{1 + g_{m3}R_4} \approx 3825.1$.

c) $R_{ul} = r_{\pi 1} = 25\text{k}\Omega$; $R_{izl} = R_4 \parallel \dfrac{r_{\pi 3} + R_3}{\beta_0 + 1} = 127\Omega$.

4.
$v_I[\text{V}] = -0.75 i_G[\text{mA}] + 0.9$, za $-5\text{mA} \le i_G \le -0.4\text{mA}$ (IOP-lin. režim, D-ON, T-DAR);
$v_I[\text{V}] = -3 i_G[\text{mA}]$, za $-0.4\text{mA} \le i_G \le 4\text{mA}$ (IOP-lin. režim, D-OFF, T-OFF);
$v_I[\text{V}] = -12\text{V} = const$, za $4\text{mA} \le i_G \le 5\text{mA}$ (IOP-neg. zasićenje, D-OFF, T-OFF).