ISPIT IZ OSNOVA ELEKTRONIKE **10.02.2018.**

ODSEK ZA FIZIČKU ELEKTRONIKU
ODSEK ZA SIGNALE I SISTEME
ODSEK ZA TELEKOMUNIKACIJE I INFORMACIONE TEHNOLOGIJE

REŠENJA ZADATAKA

1. a) $I_{C1} = 0{,}98\text{mA}$; $I_{C2} = 0{,}94\text{mA}$; $I_{C3} = I_{C4} = 0{,}96\text{mA}$, $R_4 = 1{,}88\text{k}\Omega$.

b) $a_v = \dfrac{v_i}{v_g} = -g_{m1}\left[R_2 \parallel \left(r_{\pi 2} + (\beta_0 + 1)(R_4 + R_P)\right)\right] \cdot \dfrac{g_{m2}(R_4 + R_P)}{1 + g_{m2}(R_4 + R_P)} \cdot \dfrac{R_P}{R_P + R_4} = -68{,}44$.

c) $R_{ul} = r_{\pi 1} = 1{,}276\text{k}\Omega$; $R_{izl} = R_4 + \dfrac{r_{\pi 2} + R_2}{\beta_0 + 1} = 1{,}96\text{k}\Omega$.

4. a) $V_I = 1{,}59\text{V}$.

b) $R_{ul} = 1{,}05\text{k}\Omega$.

c) $v_{\text{Imin}} = 0{,}7\text{V}$; $v_{\text{Imax}} = 2{,}3\text{V}$; $V_{im\max} = 0{,}71\text{V}$.