

Kolokvijum – rešenja

3.

a) D1 - isključena, D2 i D3 su uključene.

b)

$$I_{D2} = 5\text{mA}, r_{d2} = 5\Omega$$

$$I_{D3} = 1\text{mA}, r_{d3} = 25\Omega$$

$$I_{D4} = 4\text{mA}$$

$$V_{OUT} = 0.8\text{V}$$

c)

$$v_{OUT} = V_{OUT} + v_{out}$$

$$v_{out} = i_g \frac{R_4 \cdot (r_{d3} + R_3)}{R_4 + r_{d3} + R_3} = 123.8\text{mA} \sin(\omega t)$$

4.

$$I_D = 4\text{mA}$$

$$G_m = 4\text{mS}$$

$$R_u = R_1 \parallel R_2 = 2.4\text{k}\Omega$$

$$R_i = R_D = 4\text{k}\Omega$$

$$A_v = g_m (R_D \parallel R_P) = 3.2$$