ELEKTRONIKA 1

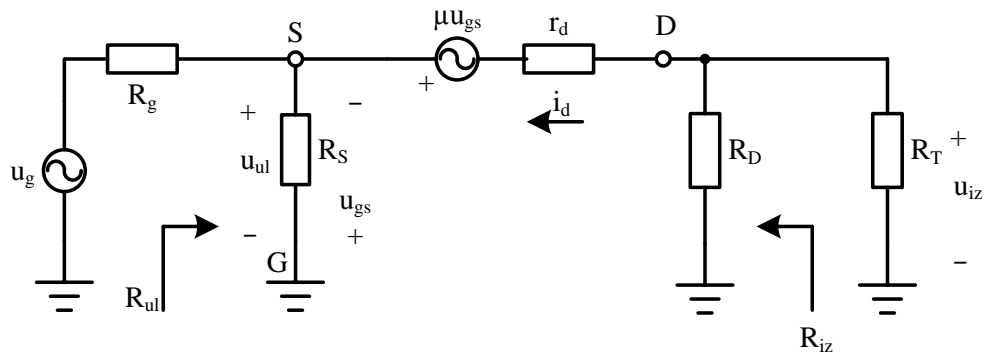## Završni ispit – 29.1.2014.

Rješenja

ZADACI:

1.

   a)

$$U_{GSQ} = 2{,}11 \text{ V}; \ I_{DQ} = 2{,}92 \text{ mA}; \ U_{DSQ} = 3{,}766 \text{ V}.$$
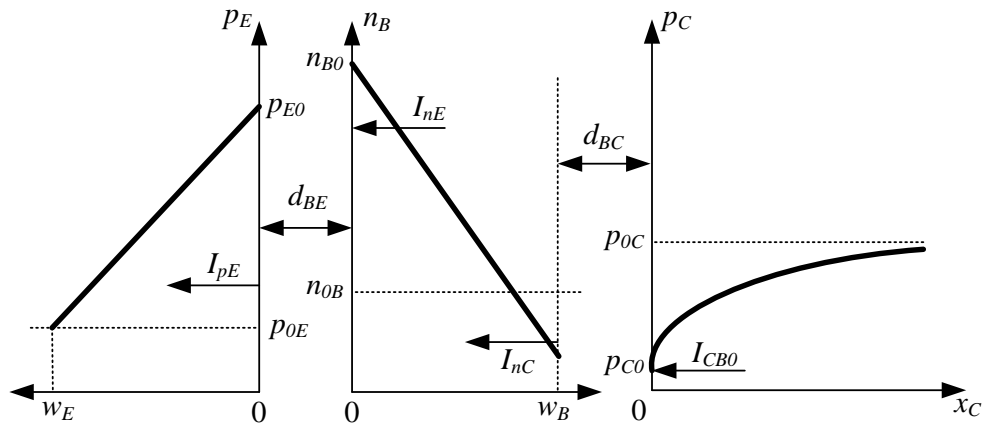
   b)

$$A_{Vg} = \frac{(1 + \mu)(R_D \| R_T)}{r_d + R_D \| R_T} \frac{R_{ul}}{R_g + R_{ul}} = 1{,}48.$$

   c)

$$R_{iz} = R_D \big\| \big[r_d + (1 + \mu)(R_g \| R_S) \big] \approx R_D = 1{,}98 \text{ k}\Omega.$$

2.

   a)

b)

$$I_{nE} = 3{,}802 \text{ mA}; \ I_{pE} = 39 \text{ µA}; \ I_R = 13 \text{ µA}.$$
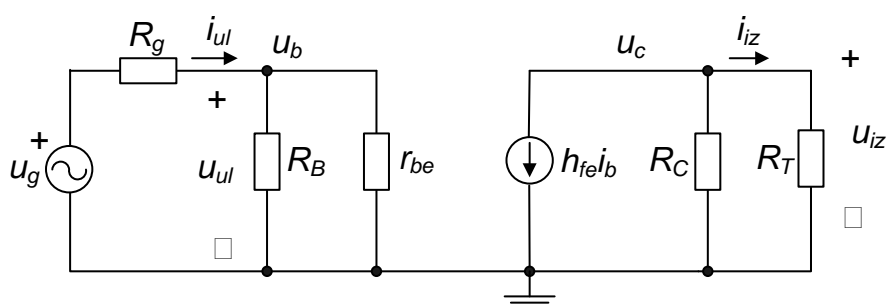
$$I_E = -3{,}840 \text{ mA}; \ I_B = 52 \text{ µA}; \ I_C = 3{,}788 \text{ mA}.$$

c)

$$\gamma = 0{,}990; \ \alpha = 0{,}986; \ \beta = 72{,}5.$$

3.

a)

$$A_V = -\frac{h_{fe}(R_C \| R_T)}{r_{be}}; \ R_{ul} = R_B \| r_{be}.$$

b)

$$I_{BQ} = 23{,}1 \text{ µA}; \ I_{CQ} = 1{,}87 \text{ mA}; \ U_{CEQ} = 6{,}39 \text{ V}.$$

4.

a)

$$I_{Z2} = 5{,}8 \text{ mA}; \ Z_2 \text{ se nalazi u području proboja.}$$

b)

$$U_{IZ} = 11{,}9 \text{ V}.$$

c)

Pojačalo radi u linearnom području.

PITANJA:

	A	B	C	D
1.	A	B	C	E
2.	A	E	D	C
3.	C	E	D	A
4.	A	D	D	B
5.	B	D	E	A
6.	A	D	C	B
7.	B	A	C	E