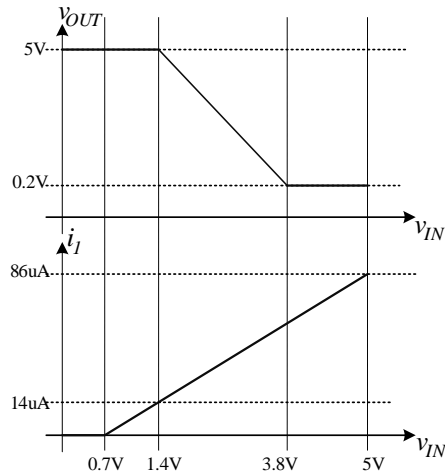


# Elementi elektronike – AVGUST 2020 - REŠENJA

## Zadatak 3.



### Segmenti:

- I)  $v_{IN} \leq 0.7V$ ,  $i_1 = 0, v_{OUT} = V_{CC} = 5V$ , D – OFF, Q – OFF**
- II)  $0.7V \leq v_{IN} \leq 1.4V$ ,  $i_1 = (v_{IN} - V_D) / R_1 = 20mSv_{IN} - 14\mu A$ ,  $v_{OUT} = V_{CC} = 5V$ , D – ON, Q – OFF**
- III)  $1.4V \leq v_{IN} \leq 3.8V$ ,  $i_1 = (v_{IN} - V_D) / R_1 = 20mSv_{IN} - 14\mu A$ ,  $v_{OUT} = V_{CC} - \beta R_C / R_B (v_{IN} - V_D - V_{BE}) = 5V - 2(v_{IN} - 1.4V)$ , D – ON, Q – ON<sub>DAR</sub>**
- IV)  $3.8V \leq v_{IN} \leq 5V$ ,  $i_1 = (v_{IN} - V_D) / R_1 = 20mSv_{IN} - 14\mu A$ ,  $v_{OUT} = V_{CES} = 0.2V$ , D – ON, Q – ON<sub>ZAS</sub>**

## Zadatak 4.

Pogledati zadatak 3.19 u zbirci

## Zadatak 7.

$$v_{OUT} = (R_2 R_4) / (R_1 R_3) v_1 + (R_1 R_3 - R_1 R_4 - R_2 R_4) / (R_1 R_3) v_2$$

## Zadatak 8.

$a_1$	$a_0$	$b_1$	$b_0$	$Y_2$	$Y_1$	$Y_0$
0	0	0	0	0	0	0
0	0	0	1	0	0	1
0	0	1	0	0	1	0
0	0	1	1	0	1	1
0	1	0	0	1	0	1
0	1	0	1	0	0	0

0	1	1	0	0	0	1
0	1	1	1	0	1	0
1	0	0	0	1	1	0
1	0	0	1	1	0	1
1	0	1	0	0	0	0
1	0	1	1	0	0	1
1	1	0	0	1	1	1
1	1	0	1	1	1	0
1	1	1	0	1	0	1
1	1	1	1	0	0	0

$$Y_2 = a_1 \bar{b}_1 + \bar{b}_1 a_1 a_0 + \bar{b}_0 a_0 \bar{b}_1$$

$$Y_1 = a_1 a_0 \bar{b}_1 + \bar{b}_1 a_1 \bar{b}_0 + \bar{a}_0 b_1 \bar{a}_1 + \bar{b}_0 a_1 \bar{b}_1$$

$$Y_0 = \bar{a}_0 b_0 + \bar{b}_0 a_0$$

**Zadatak 9.**

Moduo brojanja je 6.