

# Aufgabe 13

geg.:  $U_F = 0,7V$

$U_Z = 7,4V$

$R_1 = 2k\Omega$

$R_2 = 5k\Omega$

$U = RI$

$\Rightarrow I = \frac{U}{R} = \frac{U_{ges} - U_F}{R}$

①  $I_1 = \frac{15V - 0,7V}{R} = 7,15mA$

②  $I_2 = 0 \quad U = 15V$

③  $I_3 = 7,15mA$   
 $U = 0,7V$

④  $I_u = \frac{15 - 7,4}{2k} A = 3,8mA$

⑤  $I_5 = 3,8mA$   
 $U = 15V - 7,4V = 7,6V$

⑥  $I_6 = \frac{1,4}{2k\Omega} A = 0,7mA$   
 $U = 15V - 1,4V = 13,6$

⑦  $I_R = \frac{13,6V}{2k\Omega} = 6,8mA$

$I_R = I_6 + I_7 \Rightarrow I_7 = 6,1mA$

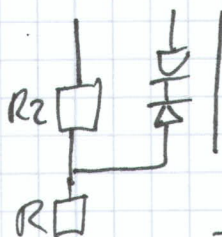
⑧  $I_8 = 7,15mA$   
 $U = 15V - 0,7V - 7,4V = 6,9V$

$I_9 = 0$

$I_{10} = \frac{U_Z}{R_1} = 0,35mA$



⑪  $I_{11} = I_8 - I_{10} = 6,8mA$



$U_Z = 8,1V$

$I_{12} = 1,62mA$

$I_{13} = 1,6mA$

$I_{14} = 3,84mA$

$I_{15} = 3,8$

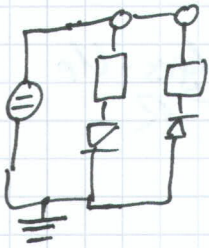
$U_8 = 15V - 0,7V - 7,4V = 6,9V$

$I_{14} = \frac{6,9V}{2k\Omega} = 3,45mA$

$I_{15} = \frac{7,6V}{2k\Omega} = 3,8mA$

$U_9 = 7,6 = (15 - 7,4)V$

## Aufgabe 16



Strom:  $I_{01} \approx 200 \mu A$ ,  $I_{02} = 0$

$$U = U_{R1} + U_{D1} \Rightarrow 5V = U_{R1} + 0,7V$$

$$\Rightarrow 4,3V = U_{R1}$$

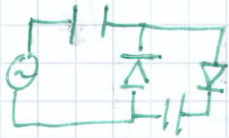
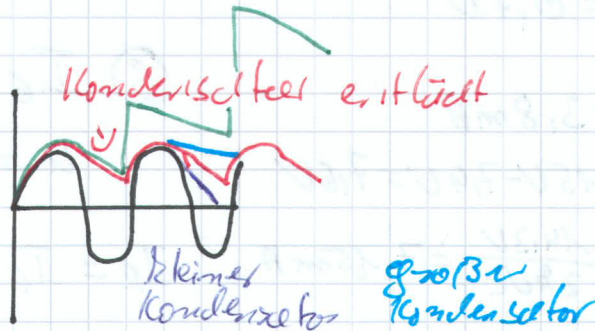
$$R_1 = \frac{U_{R1}}{I} = \frac{4,3}{200 \mu A} = 21,5 k\Omega$$

$$R_{Diode} = \frac{U_{D1}}{I} = \frac{0,7}{200 \mu A}$$

$$= 3,5 k\Omega$$

## Aufgabe 14

$U_1 = 50V$



## Aufgabe 15

