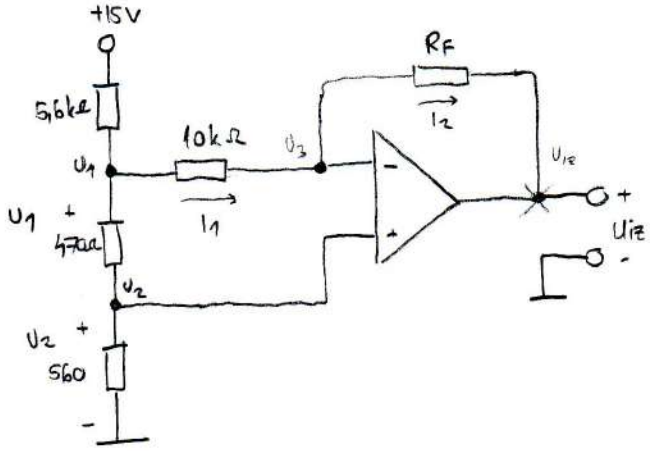
6. LABORATORIJSKA VJEŽBA

OPERACIJSKO POJAČALO PRIPREMA

2.) $R_F = 10\,k\Omega$

$U_{iz}, U_1, U_2 = ?$



$$I_1 = \frac{U_1 - U_-}{10k}$$

$$I_2 = \frac{U_- - U_{iz}}{R_F}$$

$$I_1 = I_2$$

$$R_F \cdot \frac{U_1 - U_-}{10k} = \frac{U_- - U_{iz}}{R_F}$$

$$U_{iz} = U_- - R_F \cdot \frac{U_1 - U_-}{10k} \quad | \; U_- = U_2$$

$$\boxed{U_{iz} = U_2 - R_F \cdot \frac{U_1 - U_2}{10k}}$$

NAPONI ČVOROVA:

(1) $U_1\left(\frac{1}{5,6k\Omega} + \frac{1}{10k\Omega} + \frac{1}{470}\right) - 15 \cdot \frac{1}{5,6k\Omega} - U_3 \cdot \frac{1}{10k\Omega} - U_2 \frac{1}{470} = 0$

(2) $U_2\left(\frac{1}{560} + \frac{1}{470}\right) - U_1 \cdot \frac{1}{470} = 0$

(3) $U_3\left(\frac{1}{10k} + \frac{1}{R_F}\right) - U_1 \frac{1}{10k} = U_{iz} \cdot \frac{1}{R_F}$

$U_3 = U_2$

(1) $2,4 \cdot 10^{-3} U_1 - 2,678 \cdot 10^{-3} - \frac{U_2}{10 \cdot 10^3} - \frac{U_2}{470} = 0$

(2) $3,913 \cdot 10^{-3} U_2 - \frac{U_1}{470} = 0 \rightarrow U_1 = 1,839\, U_2$

$$2,4 \cdot 10^{-3} U_1 - 2,2276 \cdot 10^{-3} U_2 = 2,678 \cdot 10^{-3}$$

$$2,186 \cdot 10^{-3} U_2 = 2,678 \cdot 10^{-3}$$

$U_2 = 1,22\ V$ $\quad U_1 = 2,25\ V$

(3) $R_F = 10 \cdot 10^3\,\Omega$

$2 \cdot 10^{-4} U_2 - 1 \cdot 10^{-4} U_1 = 1 \cdot 10^{-4} U_{iz}$

$2U_2 - U_1 = U_{iz} \rightarrow U_{iz} = 0,19\ V$

$R_F = 100\,k\Omega$

$1,1 \cdot 10^{-4} U_2 - 1 \cdot 10^{-4} U_1 = 1 \cdot 10^{-5} U_{iz}$

$11 U_2 - 10 U_1 = U_{iz}$

$U_{iz} = -9,08\ V$