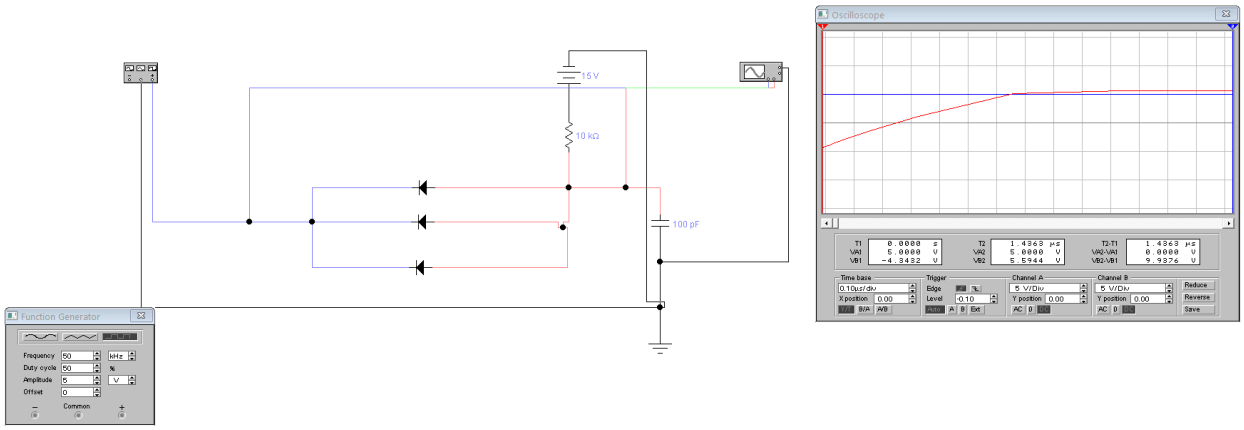
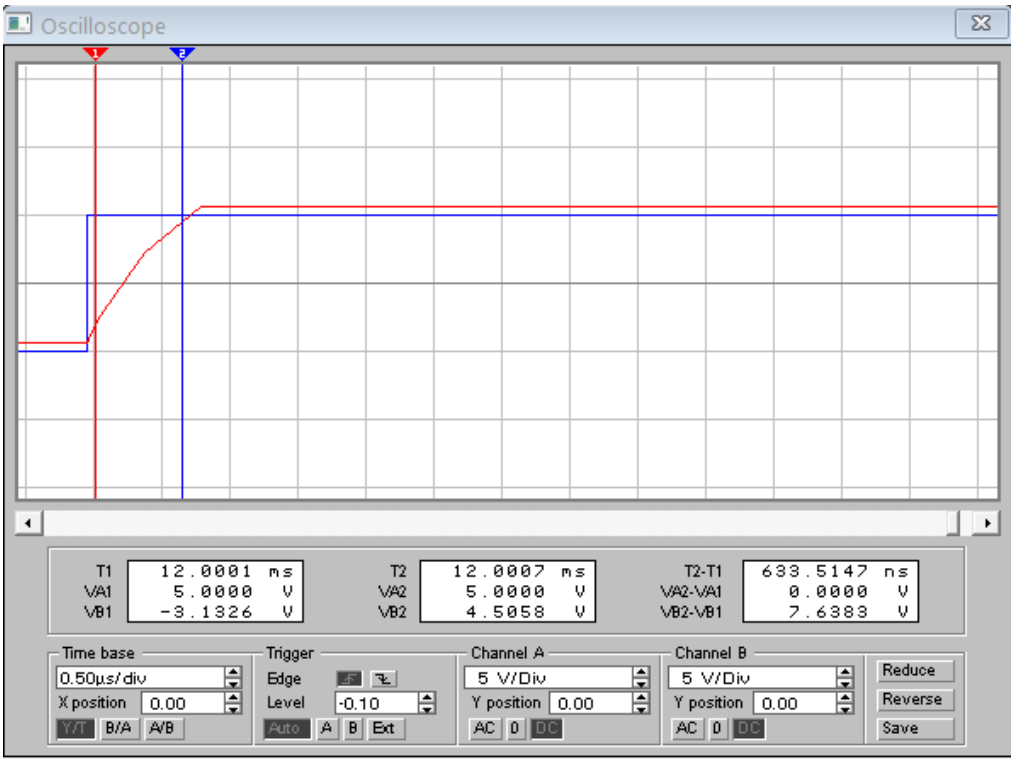
LUCRAREA 3- REGULAS ALEXANDRU 5.2

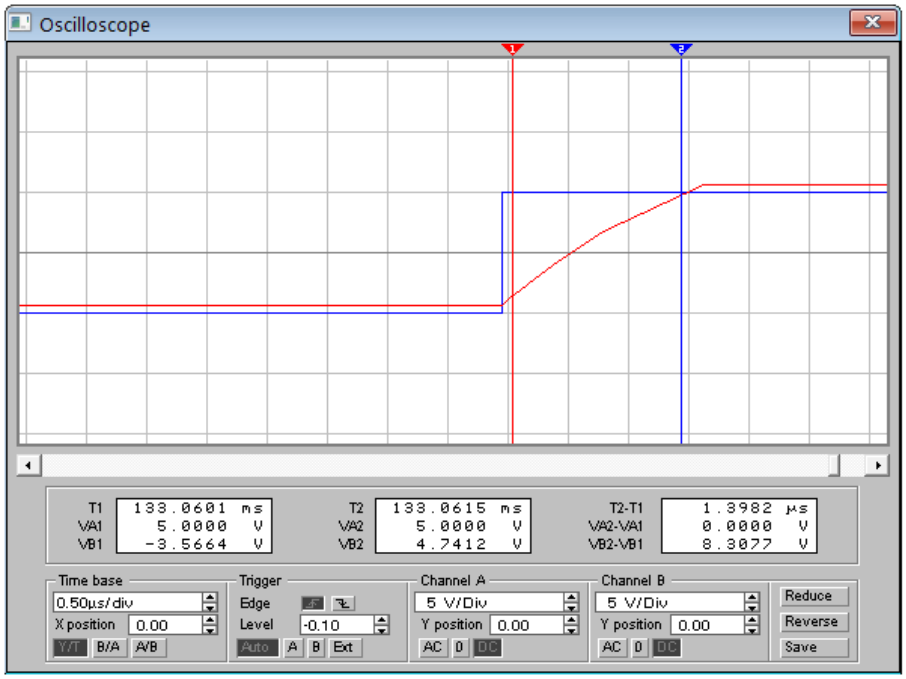


A: C=100 pF



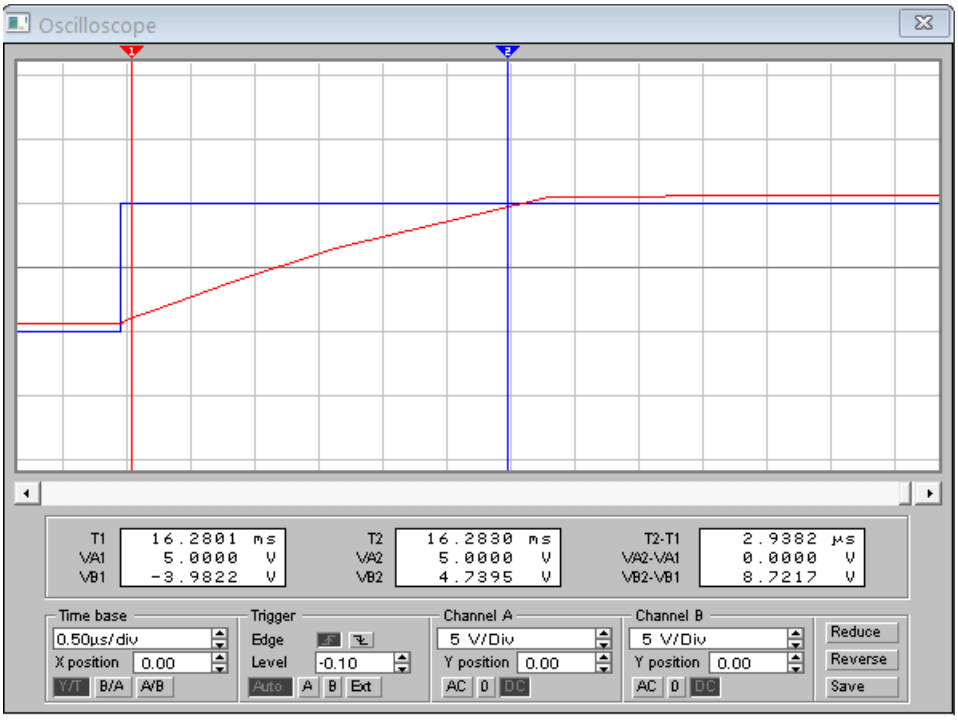
Timp ridicare 0.63 micro secunde;

B. C=220 pF



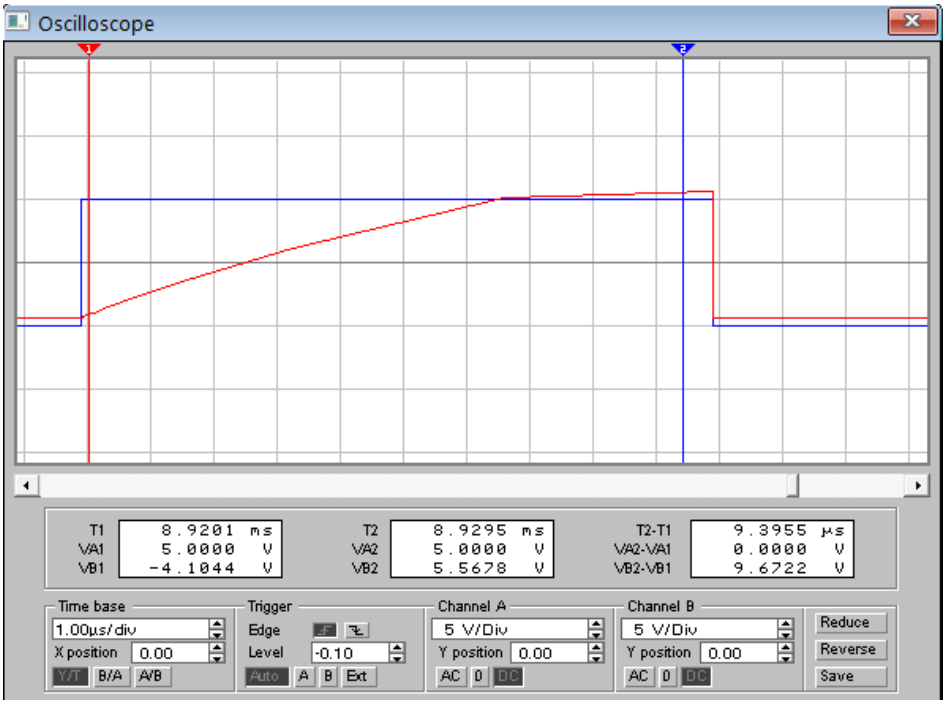
Timp de ridicare: 1.39 micro secunde;

C. . C=470 pF



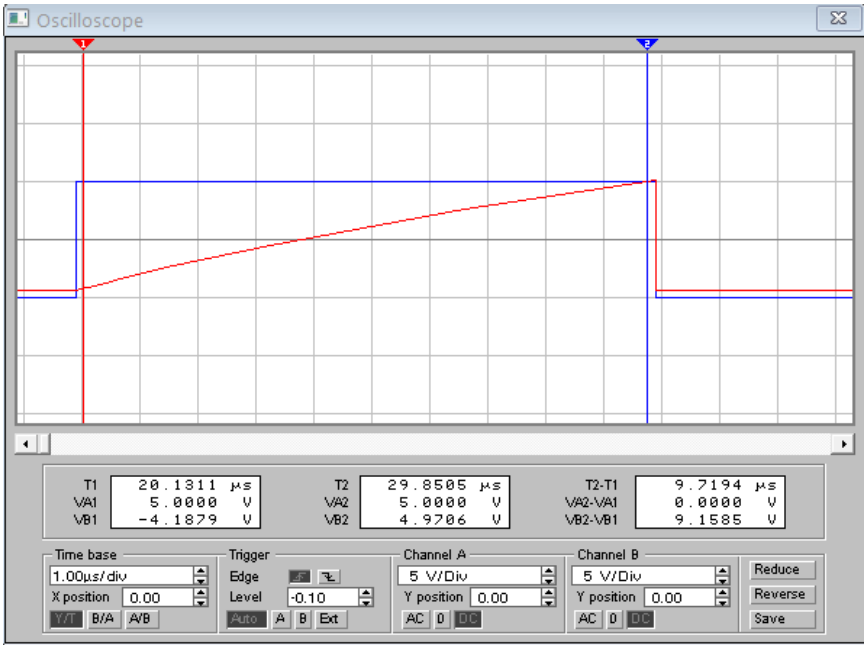
Timp ridicare 2.93 micro secunde

D: C=1nF



Timp ridicare: 9.39 micro secunde

E. C=1.5 nF



Timp de ridicare: 9.71 micro secunde;

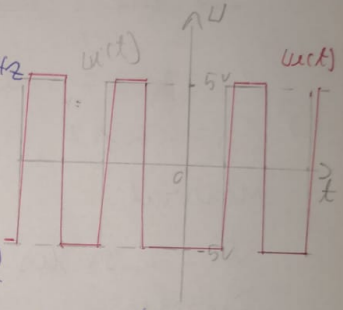
Aplicatia 3. LAB 4.

Regulas Alexandru
Gr: 5.2; An: 2

Formule:

$f = \frac{1}{T}$; $T = 2 \cdot 10^{-5}\ s$

$f = \frac{1}{2 \cdot 10^{-5}} = 50\,000\ Hz = 50\ kHz$



a) $C_1 = 100\ nF$, $R = 10\ k\Omega$

Măsurat: $t_r = 0,63\ \mu s$

Teoretic: $t_r = R C \cdot \ln 2 \Rightarrow t_r = 10^4\ \Omega \cdot 100 \cdot 10^{-12}\ F \cdot \ln 2$

$t_r = 0,69\ \mu s$

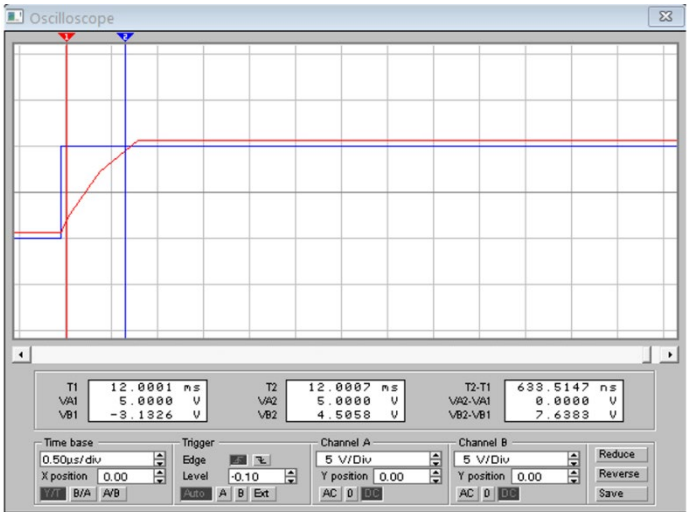
b) $C_2 = 220\ nF$, $R = 10\ k\Omega$

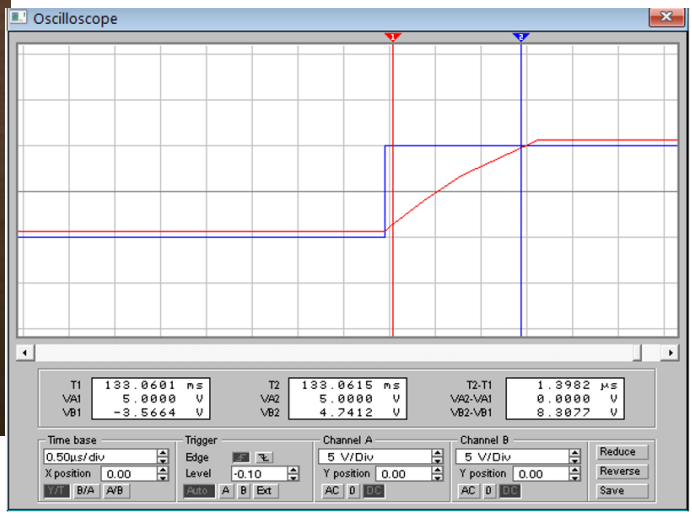
Măsurat:

$t_r = 1,39\ \mu s$

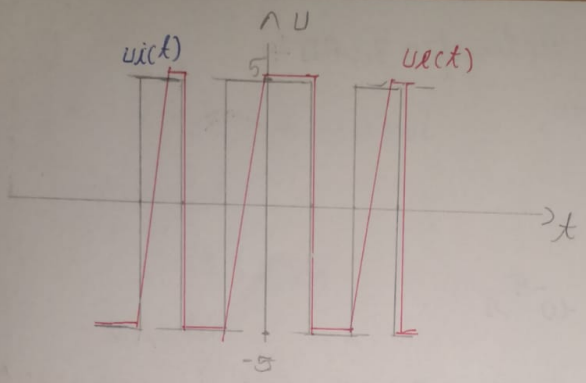
Teoretic:

$t_r = 10^4 \cdot 22 \cdot 10^{-11} \ln 2 = 1,52\ \mu s$





Regulas Alex



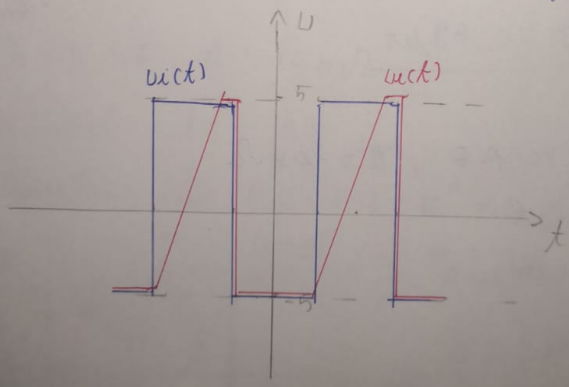
c) $C_3 = 470\,pF$, $R = 10\,M\Omega$

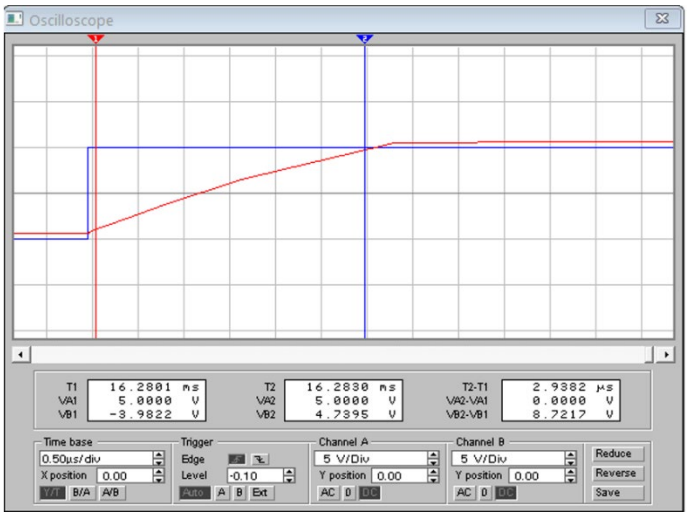
Măsurat:

$t_r = 2,93\,\mu s$

Teoretic

$t_r = R \cdot C \cdot \ln 2 = 10^4 \cdot 47 \cdot 10^{11} \ln 2 \approx 3,24\,\mu s$





d) Regulas Alex

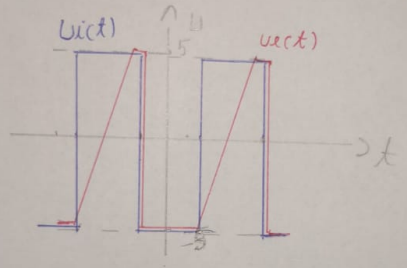
$C = 1\,nF$, $R = 10\,k\Omega$

Măsurat:

$t_r = 9{,}39\,\mu s$

Teoretic:

$t_r = RC \ln 2 = 10^4 \cdot 10^{-9} \ln 2 = 6{,}94\,\mu s$



e) $C = 1{,}5\,nF$, $R = 10\,k\Omega$

Măsurat: $t_r = 9{,}71\,\mu s$

Teoretic: $t_r = R \cdot C \cdot \ln 2 = 10^4 \cdot 1{,}5 \cdot 10^{-9} \cdot \ln 2 =$

$= 10{,}2\,\mu s$