REŠENJA ZADATAKA

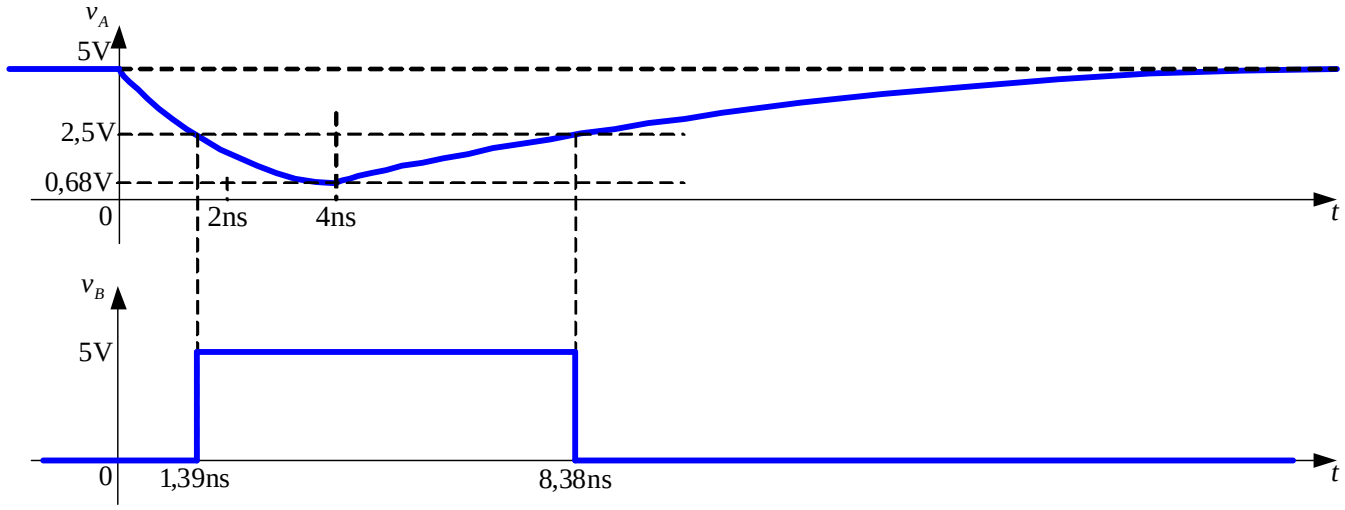
1. KOLOKVIJUM

2. a)

$$v_A(t)=\begin{cases}5\text{V}, & t<0\\ 5\text{V}\cdot e^{-5\cdot 10^8\cdot t}, & 0\le t\le 4\text{ns}\\ 5\text{V}-4{,}32\text{V}\cdot e^{-1{,}25\cdot 10^8\cdot(t-4\text{ns})}, & t\ge 4\text{ns}\end{cases}$$

b) $v_A(t_1)=2{,}5\text{V} \quad (za \quad 0<t<4\text{ns}) \quad \Rightarrow \quad t_1=1{,}39\text{ns}$

$v_A(t_2)=2{,}5\text{V} \quad (za \quad t>4\text{ns}) \quad \Rightarrow \quad t_2=8{,}38\text{ns}$



$$v_B(t)=\begin{cases}0, & t<1{,}39\text{ns}\\ 5\text{V}, & 1{,}39\text{ns}\le t\le 8{,}38\text{ns}\\ 0, & t>8{,}38\text{ns}\end{cases}$$

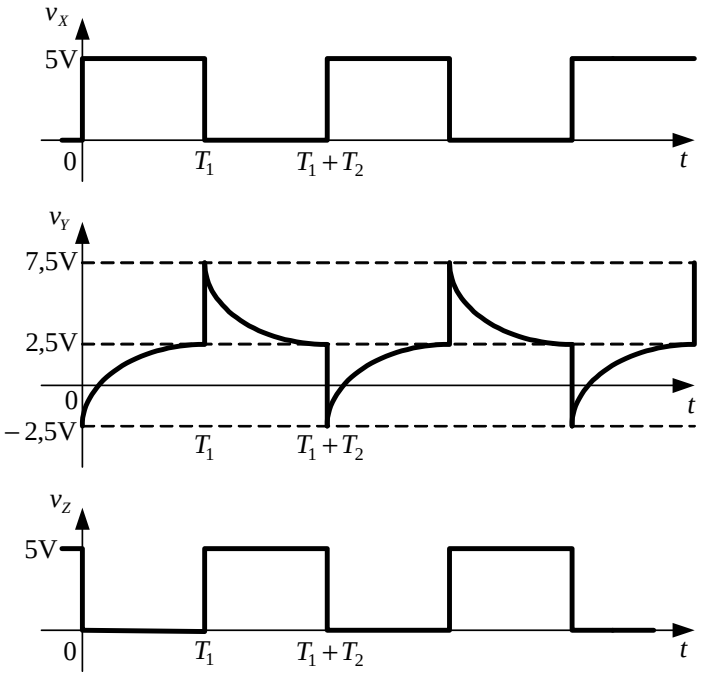
2. KOLOKVIJUM

2. $v_Y(t) = 5\text{V} - 7{,}5\text{V} \cdot e^{-20000t}$, za $0 < t < T_1$

$v_Y(t) = 7{,}5\text{V} \cdot e^{-20000(t-T_1)}$, za $T_1 < t < T_1 + T_2$

$T_1 = T_2 = 54{,}93\mu\text{s}$

$f = \dfrac{1}{T_1 + T_2} = 9{,}102\text{kHz}$



3. KOLOKVIJUM

2. a) Prekidač je zatvoren za $Q_i = 0$, a otvoren za $Q_i = 1$.

b) $R_D = 10\text{k}\Omega$ $R_0 = 90\text{k}\Omega$ $R_1 = 40\text{k}\Omega$ $R_2 = 15\text{k}\Omega$ $R_3 = 2{,}5\text{k}\Omega$

c) $R_{bo} = 12{,}5\text{k}\Omega$ $V_{MAX} = 3{,}5\text{V}$ $V_{MIN} = -4\text{V}$