

REŠENJA ZADATAKA

1. KOLOKVIJUM

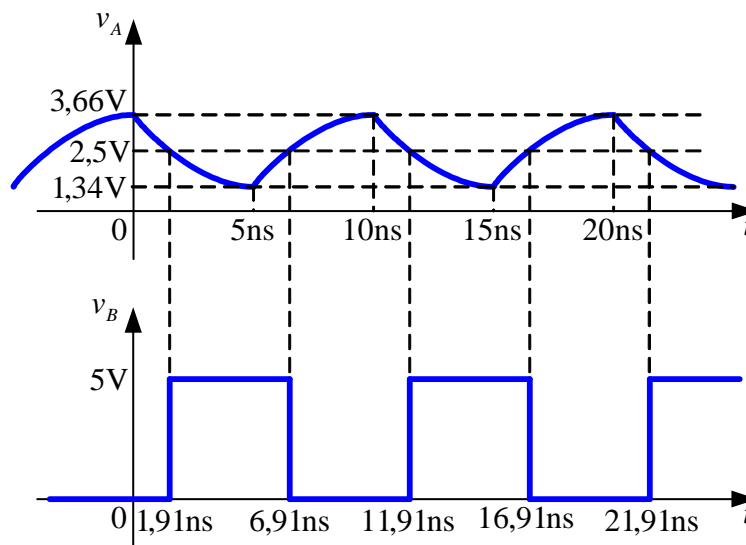
2. a)

$$v_A(t) = \begin{cases} 3,66\text{V} \cdot e^{-2 \cdot 10^8 \cdot t}, & 0 \leq t \leq 5\text{ns} \\ 5\text{V} - 3,66\text{V} \cdot e^{-2 \cdot 10^8 \cdot (t-5\text{ns})}, & 5\text{ns} \leq t \leq 10\text{ns} \end{cases}, \text{ signal se dalje periodično ponša.}$$

$$\text{b) } v_A(t_1) = 2,5\text{V} \quad (\text{za } 0 < t < 5\text{ns}) \Rightarrow t_1 = 1,91\text{ns}$$

$$v_A(t_2) = 2,5\text{V} \quad (\text{za } 5\text{ns} < t < 10\text{ns}) \Rightarrow t_2 = 6,91\text{ns}$$

$$v_B(t) = \begin{cases} 5\text{V}, & 1,91\text{ns} \leq t \leq 6,91\text{ns} \\ 0, & 6,91\text{ns} \leq t \leq 11,91\text{ns} \end{cases}, \text{ signal se dalje periodično ponša.}$$



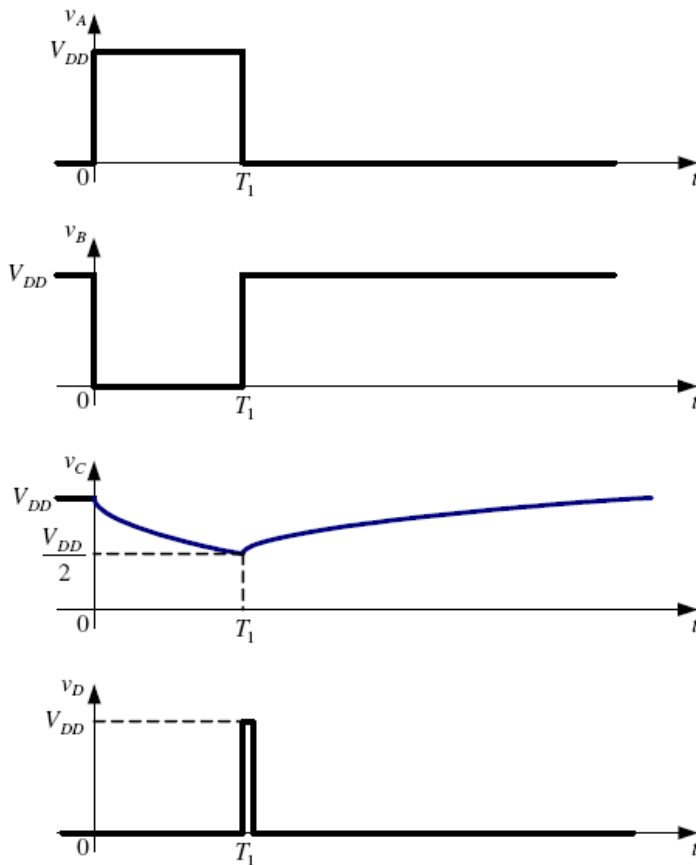
2. KOLOKVIJUM

2.

$$v_C(t) = 5V \cdot e^{-100t}, \text{ za } 0 < t < T_1,$$

$$v_C(t) = 5V - 2,5V \cdot e^{-100(t-T_1)}, \text{ za } t > T_1.$$

$$T_1 = 0,01 \ln 2 = 6,93 \text{ms}.$$



3. KOLOKVIJUM

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

b) $R_S = 0,95 \text{k}\Omega$ $R_0 = 56 \text{k}\Omega$ $R_1 = 26 \text{k}\Omega$ $R_2 = 11 \text{k}\Omega$ $R_3 = 3,5 \text{k}\Omega$

c) $R_{bo} = 1,28 \text{k}\Omega$ $V_{MAX} = 5,6 \text{V}$ $V_{MIN} = -6,4 \text{V}$