

### REŠENJA ZADATAKA

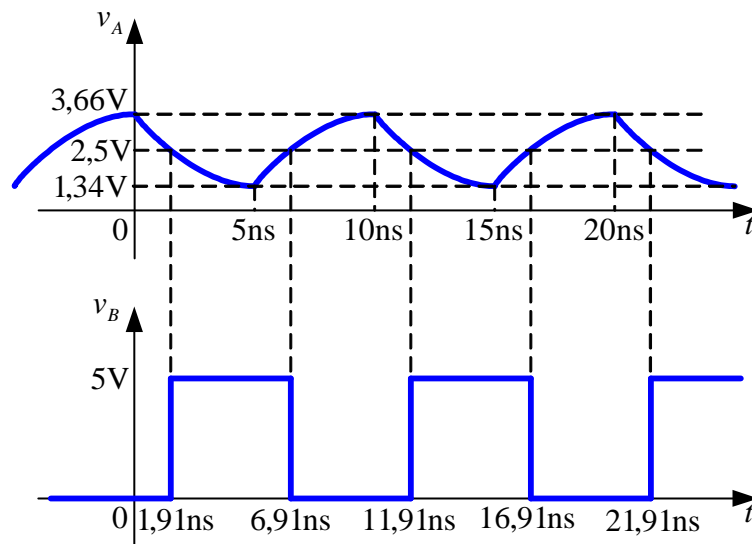
3. a)

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

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

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

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



4. a)  $Z = \overline{A} + \overline{B} \cdot \overline{C} \cdot \overline{D} + \overline{E} = \overline{A} \cdot (B + C + D) \cdot \overline{E}$

b)  $\tau_{pu} = 3 \cdot r_{dsPMOS} \cdot C = 1,5\text{ns}$

$\tau_{pr} = 3 \cdot r_{dsNMOS} \cdot C = 600\text{ps}$

