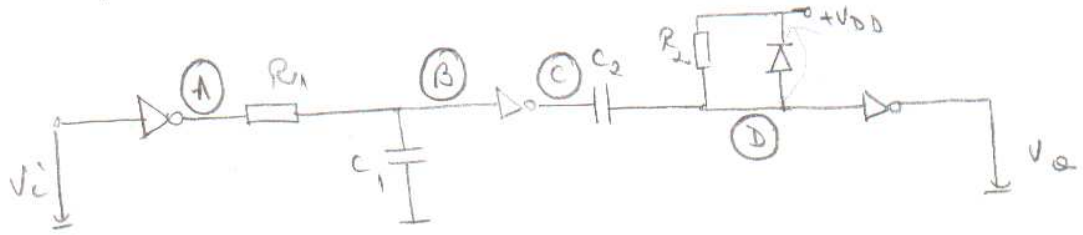
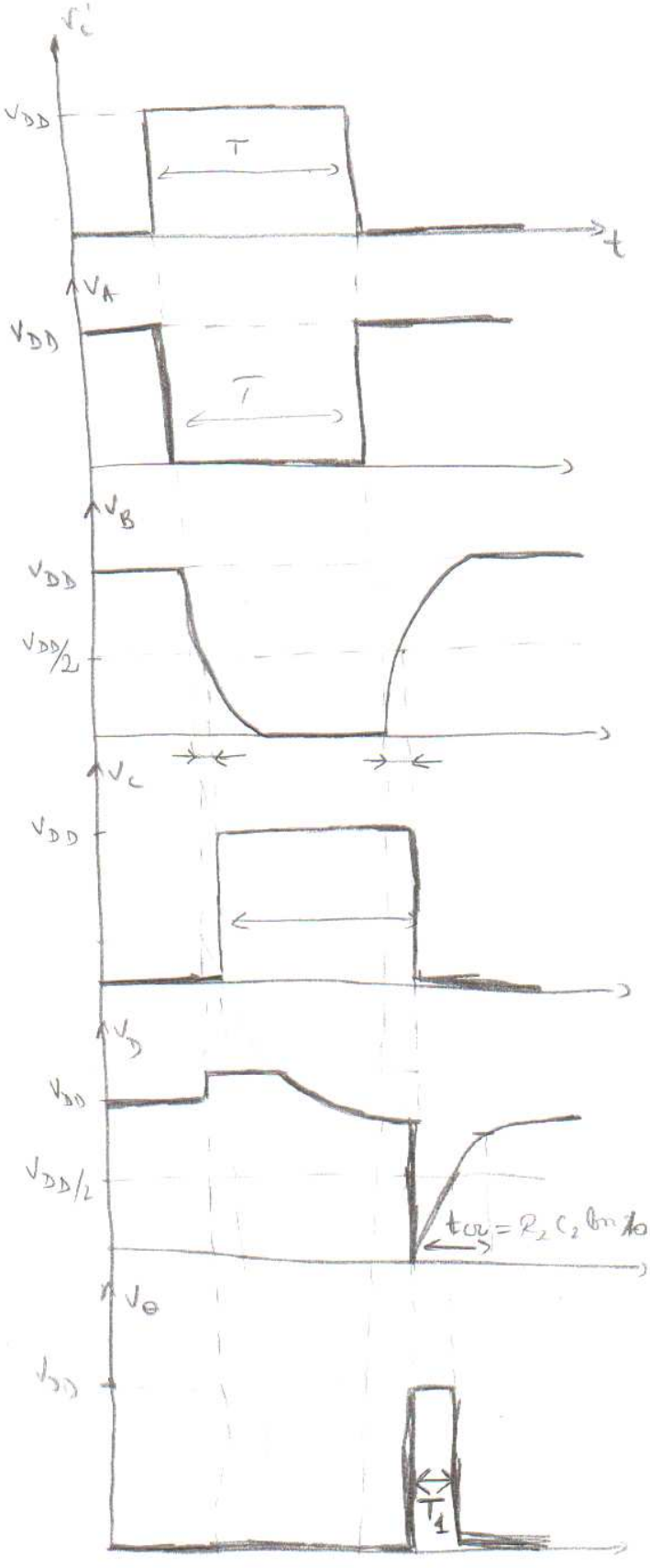
(P1)



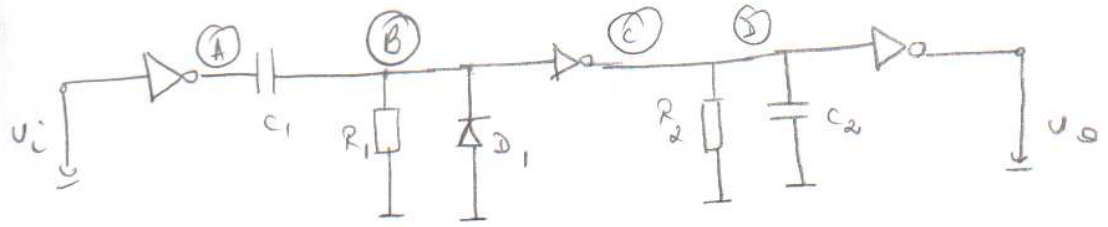
$T_1 = ?$

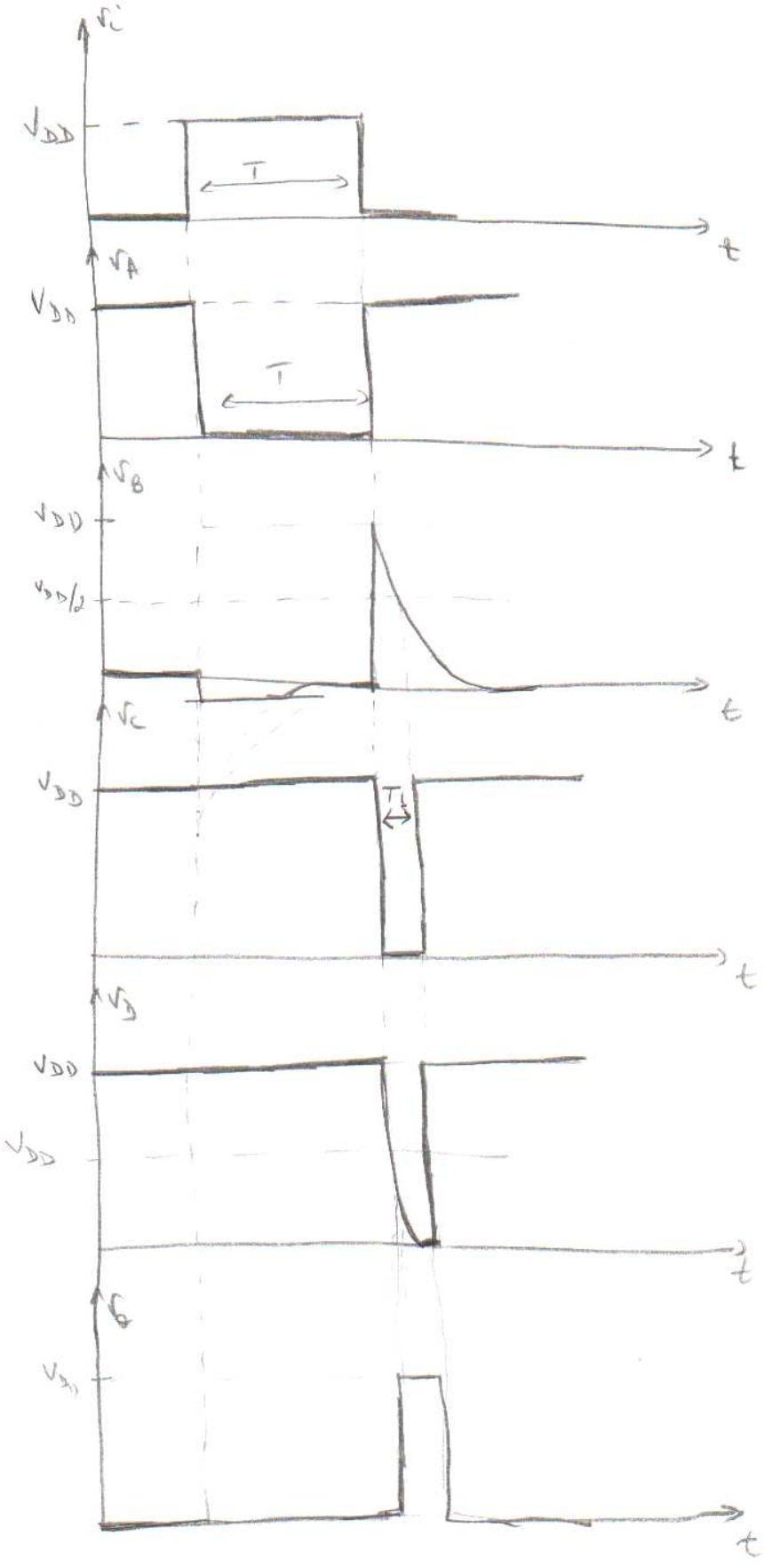
$V_D(t) = V_{DD} + (0 - V_{DD})\, e^{-t/\tau}$, $\tau = R_2 C_2$

$\boxed{T_1 = R_2 C_2 \ln 2}$

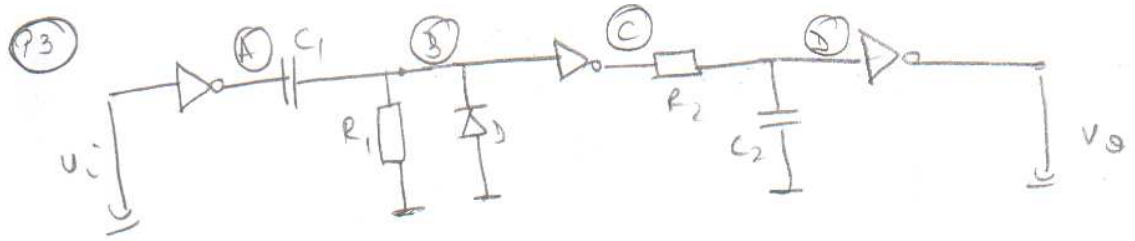


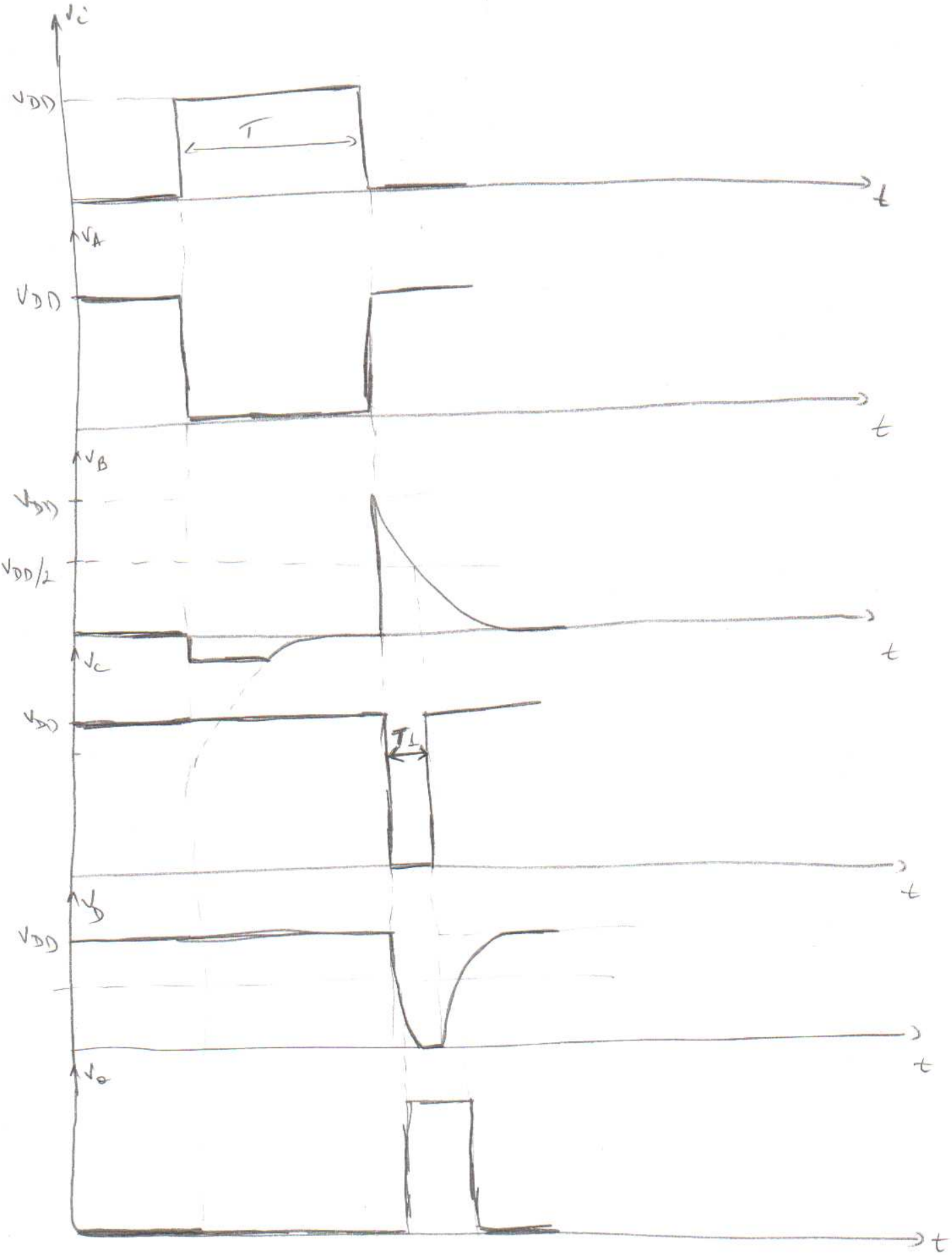
P2


A
B
C
D
v_i
C_1
R_1
D_1
R_2
C_2
v_o

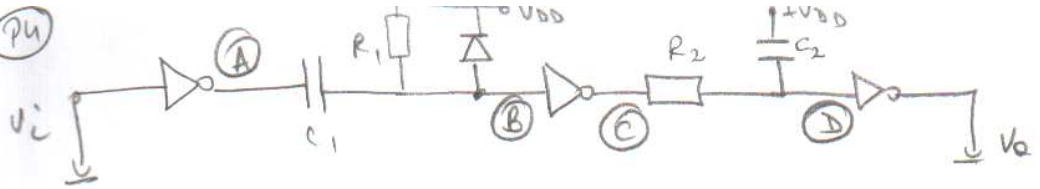

v_i
V_{DD}
T
t
v_A
V_{DD}
T
t
v_B
V_{DD}
$V_{DD}/2$
t
v_C
V_{DD}
T
t
v_D
V_{DD}
V_{DD}
t
v_o
V_{DD}
t

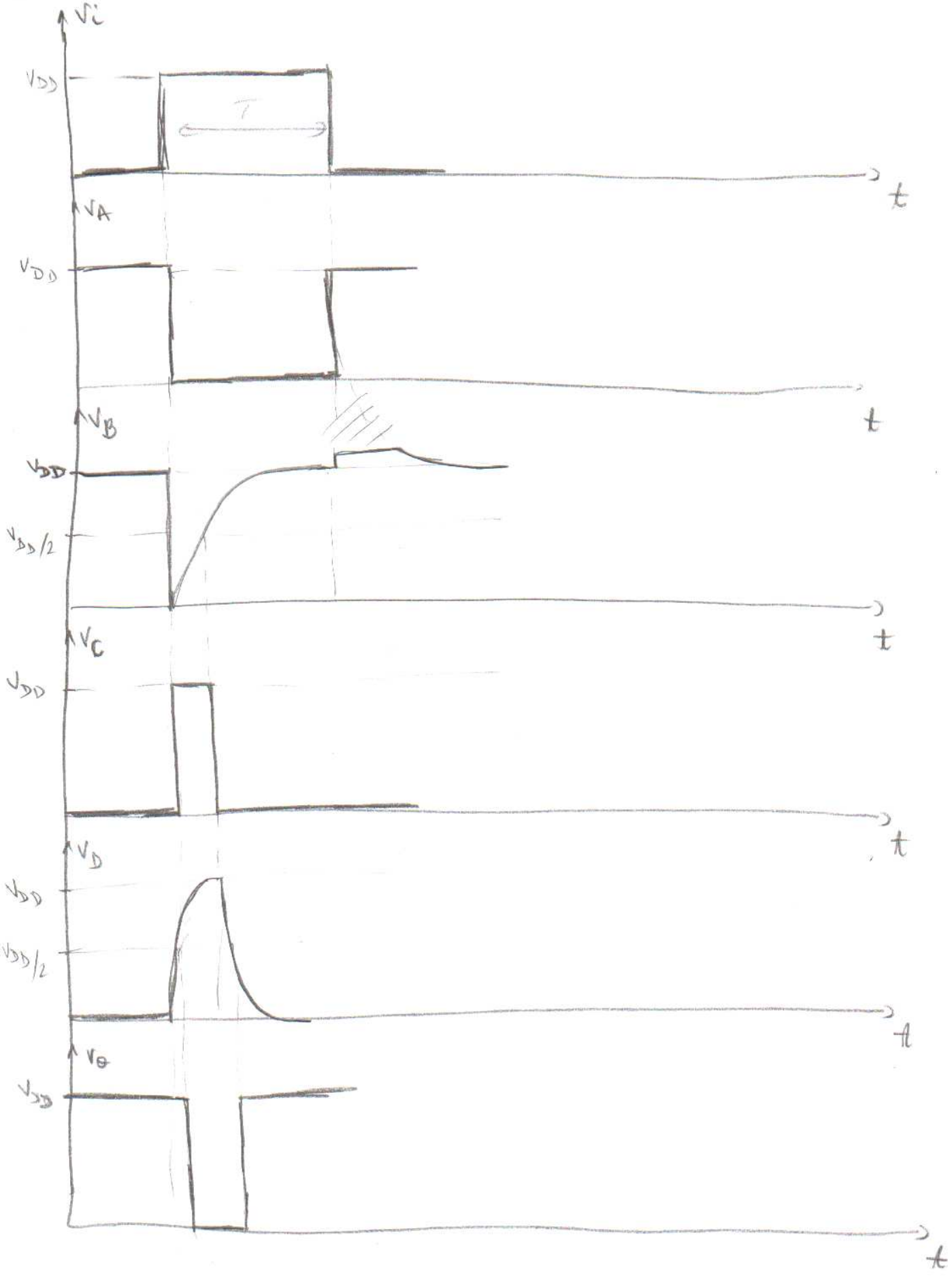
(P3)


A
C_1
B
C
D
R_1
R_2
C_2
V_i
V_o

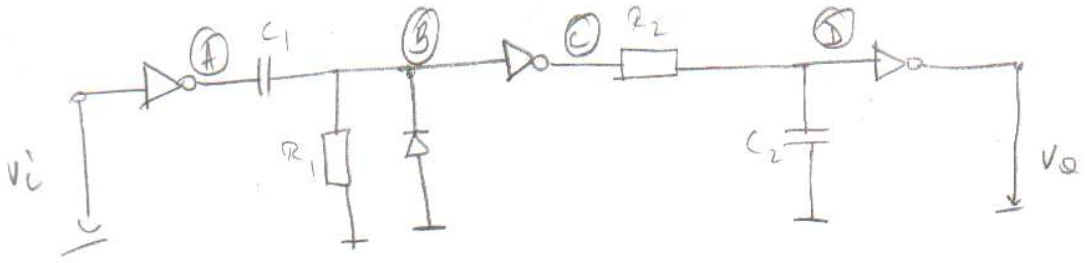

V_i
V_{DD}
T
t
V_A
V_{DD}
t
V_B
V_{DD}
$V_{DD}/2$
t
V_C
V_{DD}
T_L
t
V_D
V_{DD}
t
V_o
t

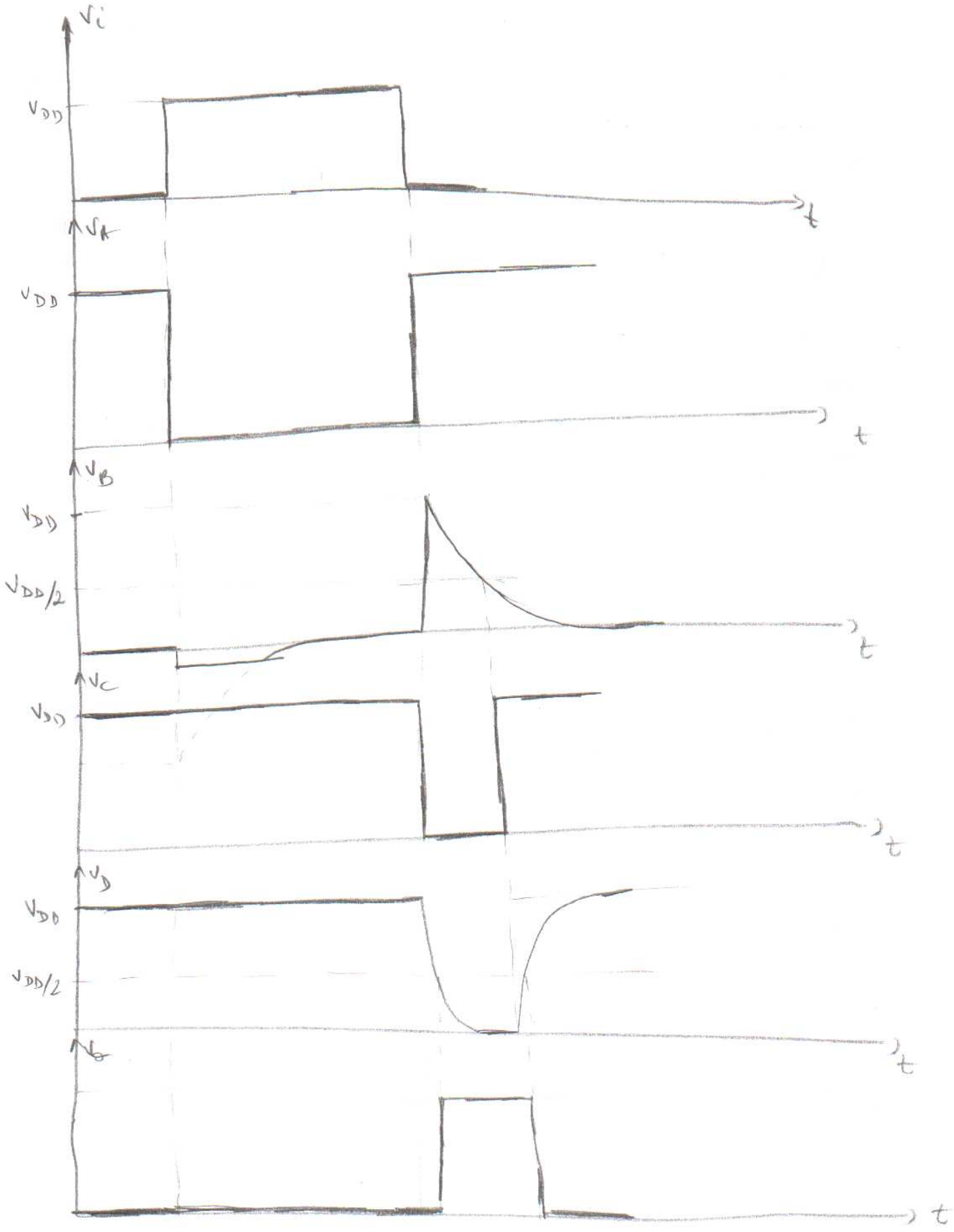
(P4)


Vi
A
R1
VDD
C1
B
C
R2
+VDD
C2
D
Vo

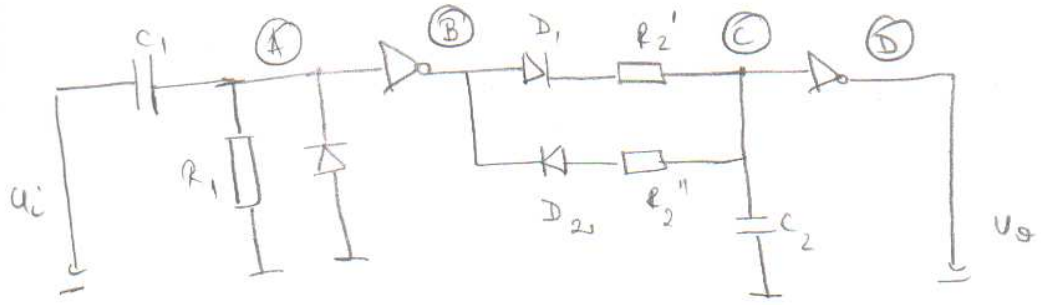

Vi
VDD
T
t
VA
VDD
t
VB
VDD
VDD/2
t
VC
VDD
t
VD
VDD
VDD/2
t
Vo
VDD
t

(P5)

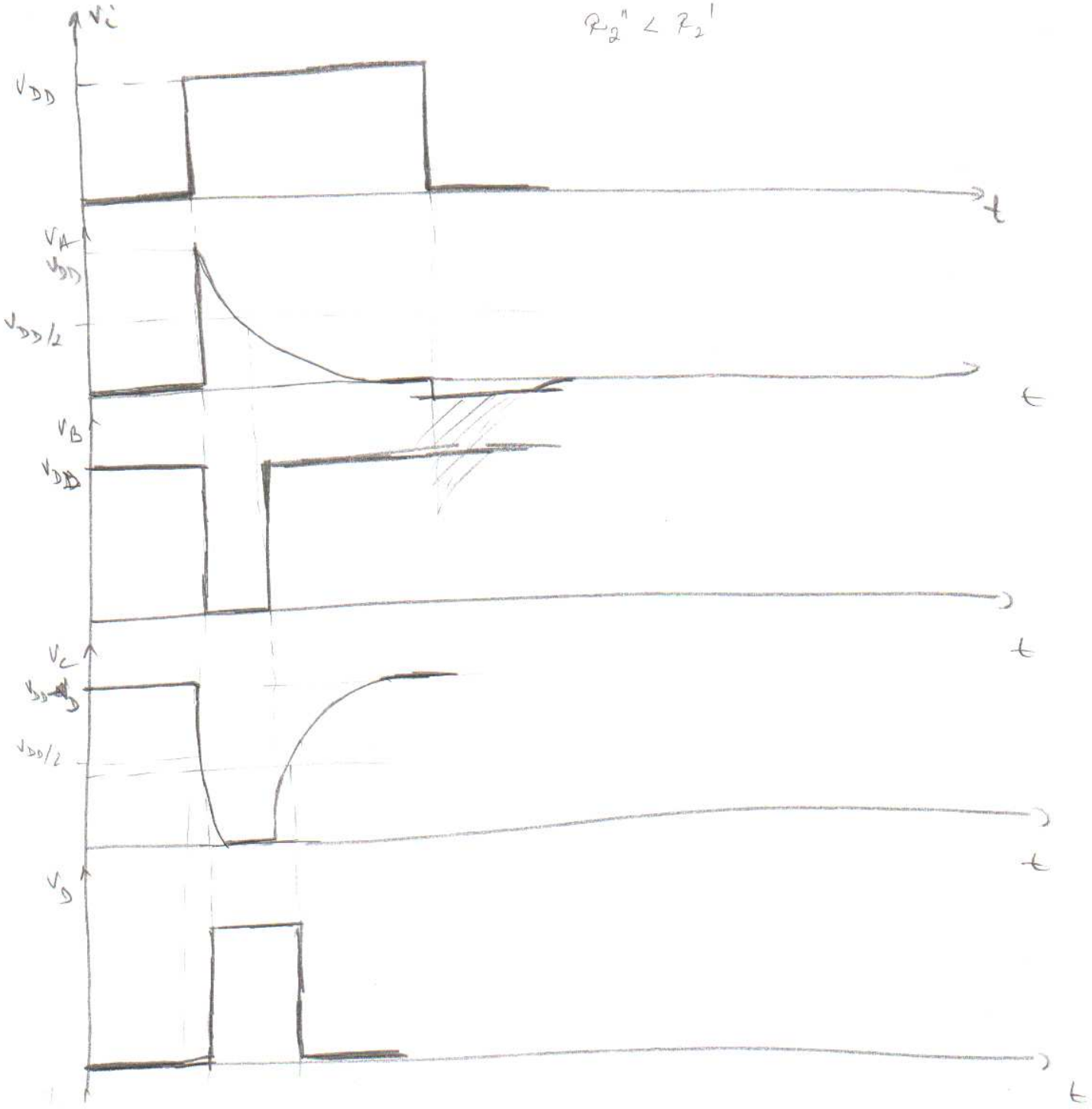

A
C_1
B
C
R_2
D
V_i
R_1
C_2
V_o


V_i
V_{DD}
t
V_A
V_{DD}
t
V_B
V_{DD}
$V_{DD}/2$
t
V_C
V_{DD}
t
V_D
V_{DD}
$V_{DD}/2$
t
V_o
t

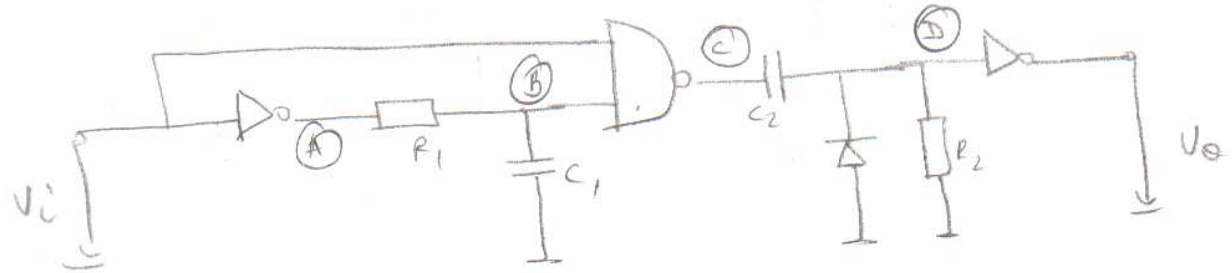
96


C1
A
B
D1
R2'
C
D
ui
R1
D2
R2"
C2
uo

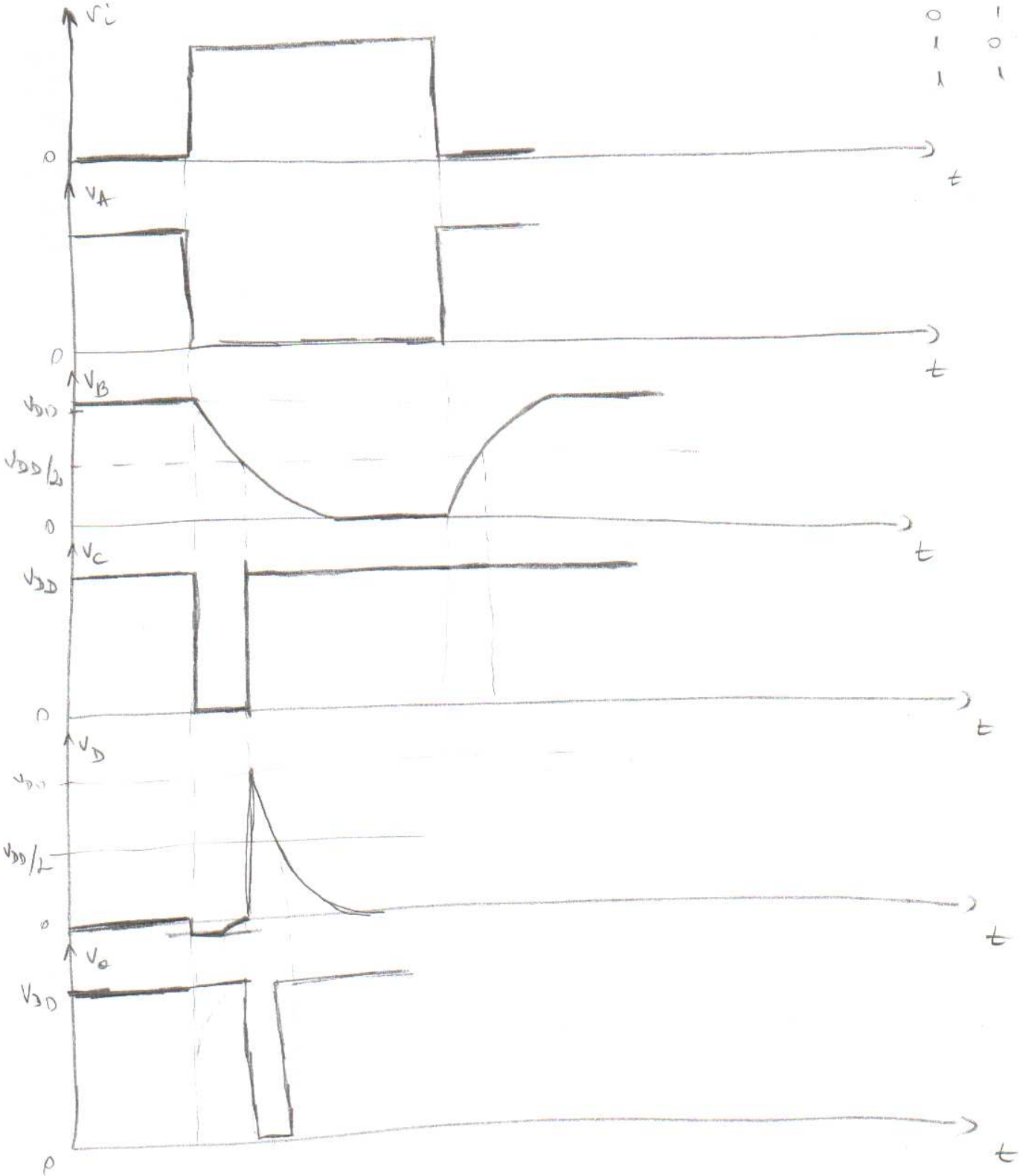
$R_2'' < R_2'$


vi
VDD
t
VA
VDD
VDD/2
t
VB
VDD
t
VC
VDD
VDD/2
t
VD
t

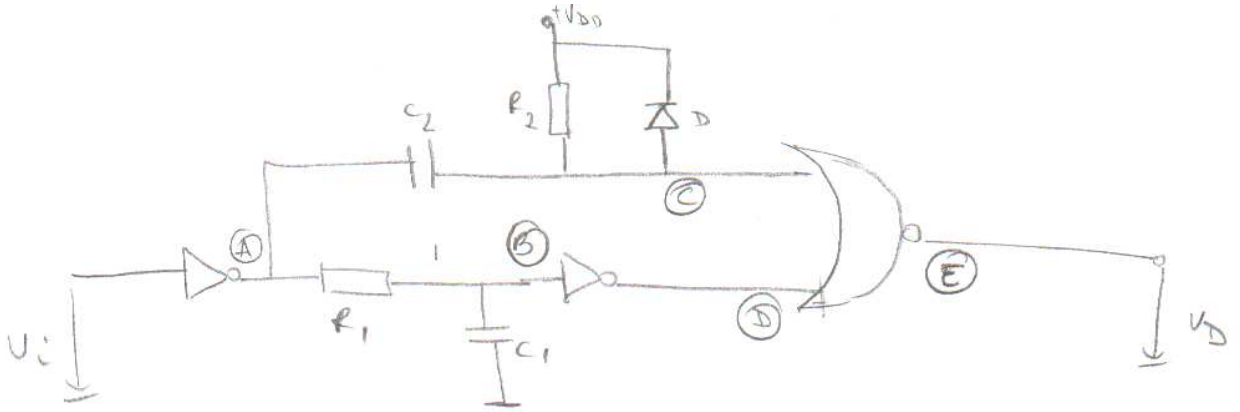
(Q4)



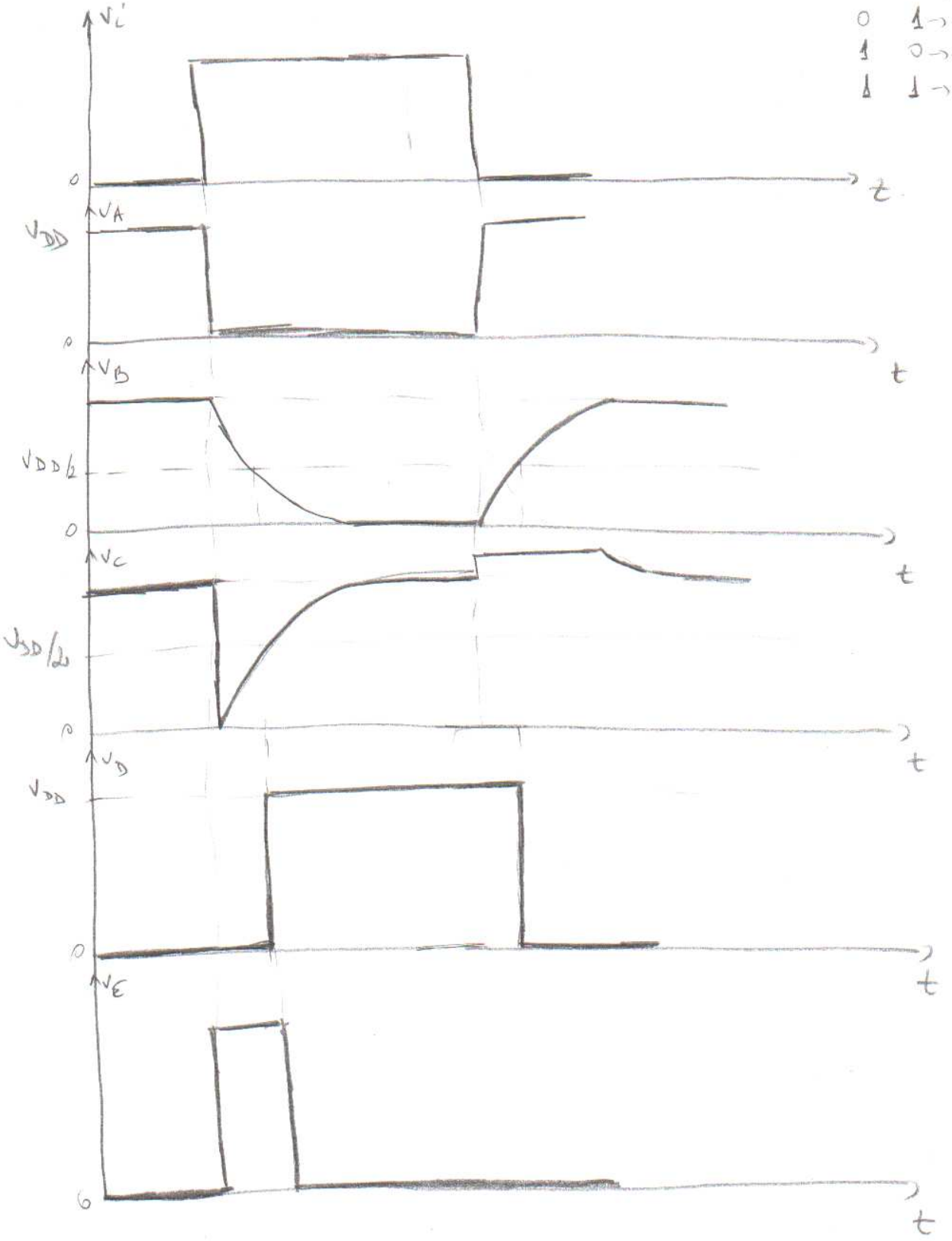
0 0 → 1
0 1 → 1
1 0 → 1
1 1 → 0



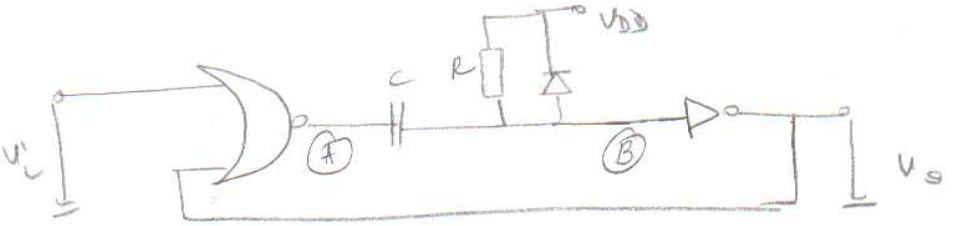
(98)



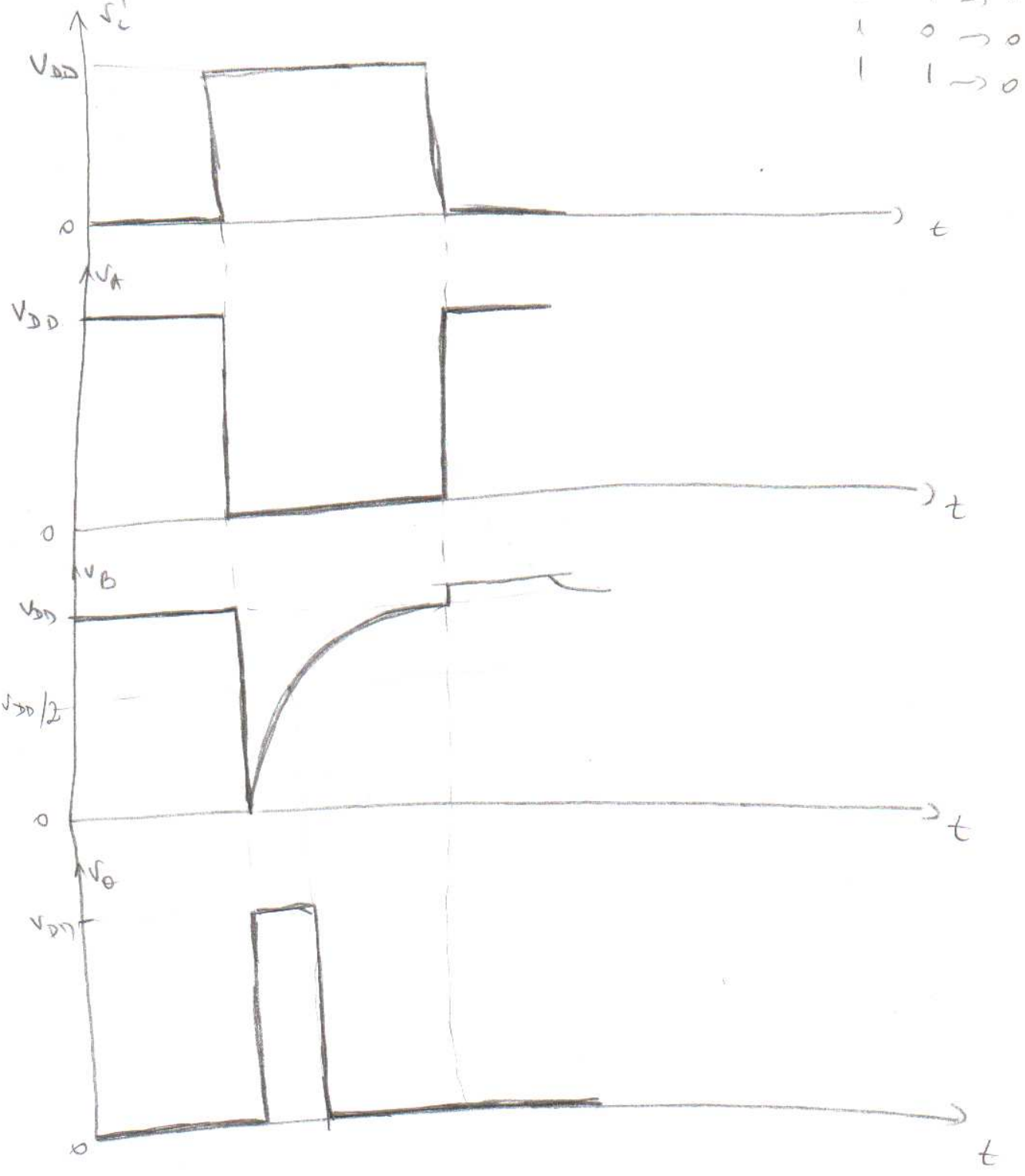
0 → 0 → 1
1 → 1 → 0
0 → 1 → 0
1 → 0 → 1

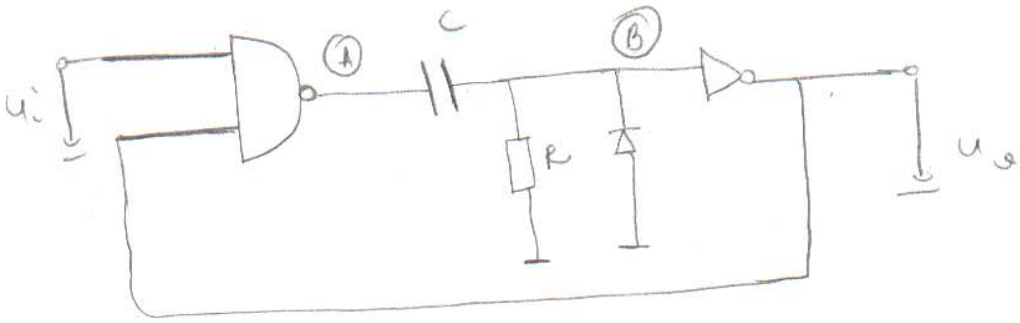


(9)

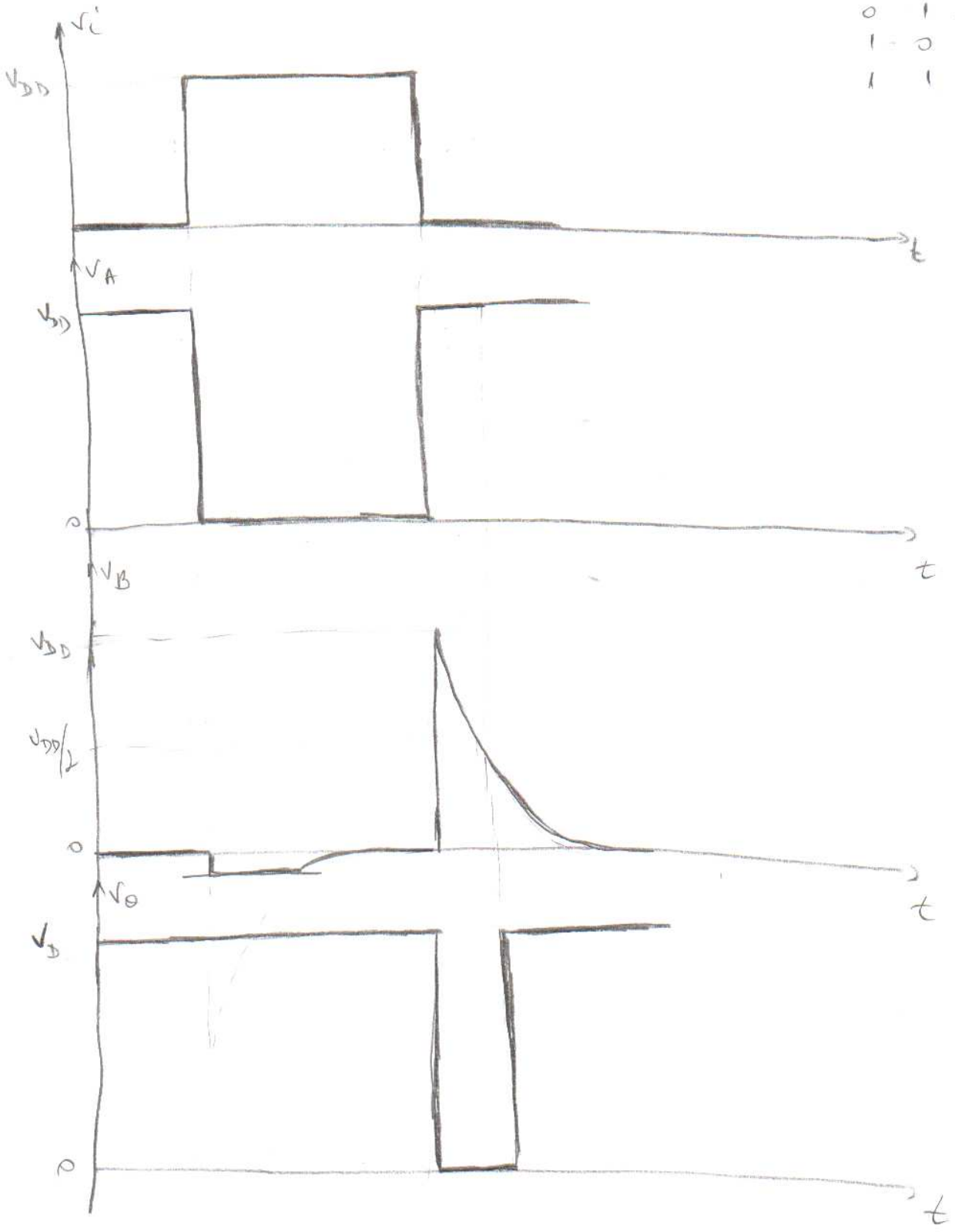


0	0	→ 1
0	1	→ 0
1	0	→ 0
1	1	→ 0

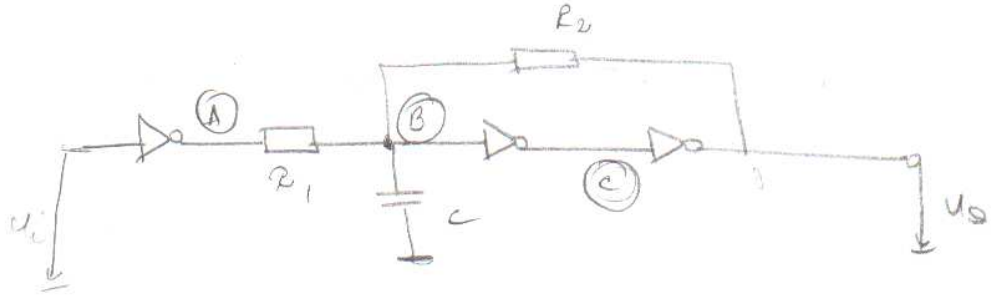


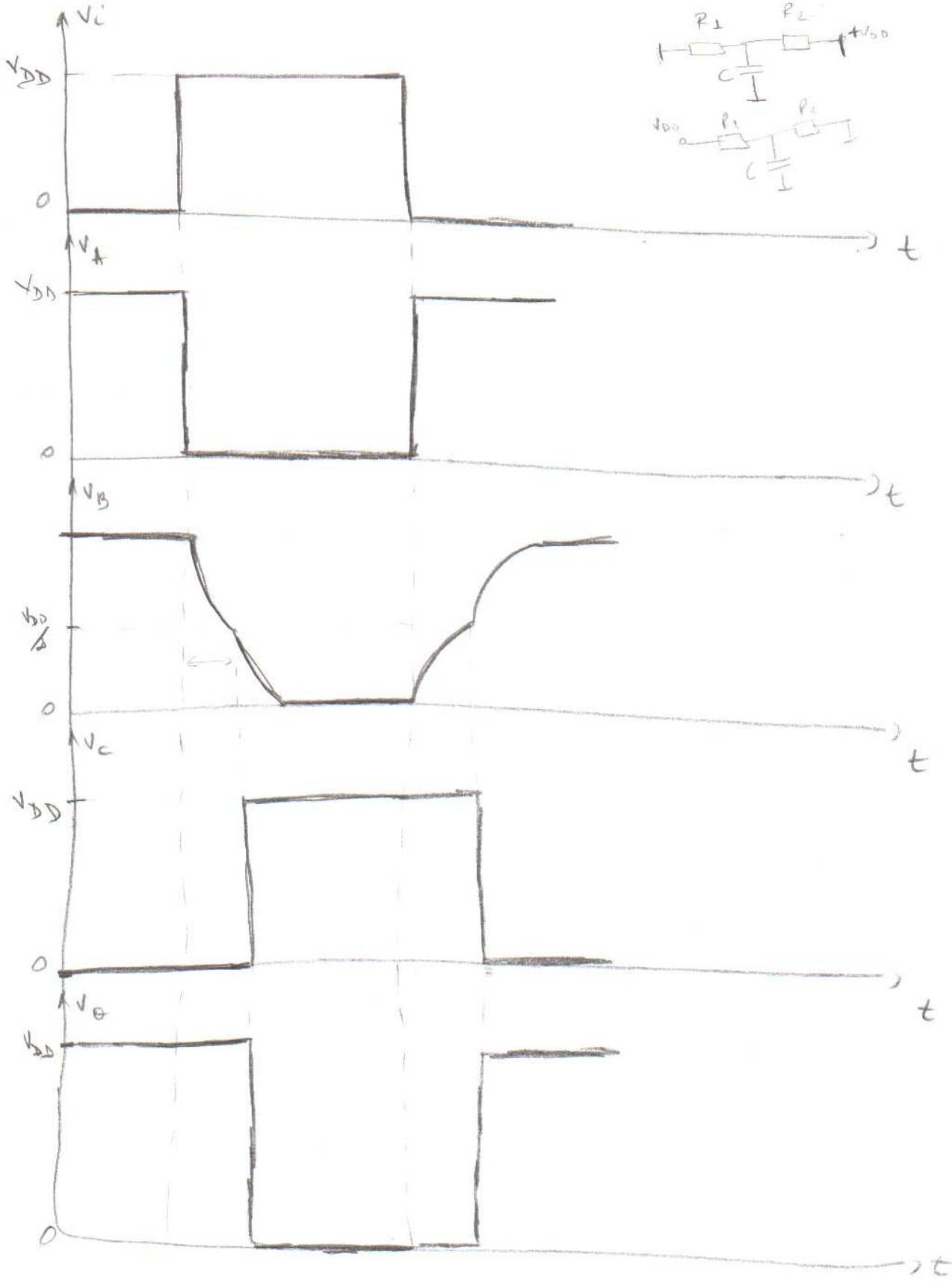


0 0 → 1
0 1 → 1
1 0 → 1
1 1 → 0

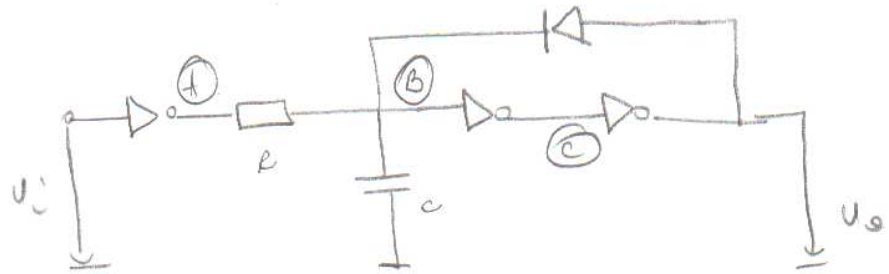


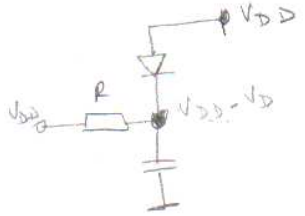
P11

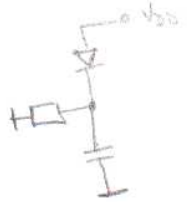

R2
A
B
C
R1
C
Vi
Vo

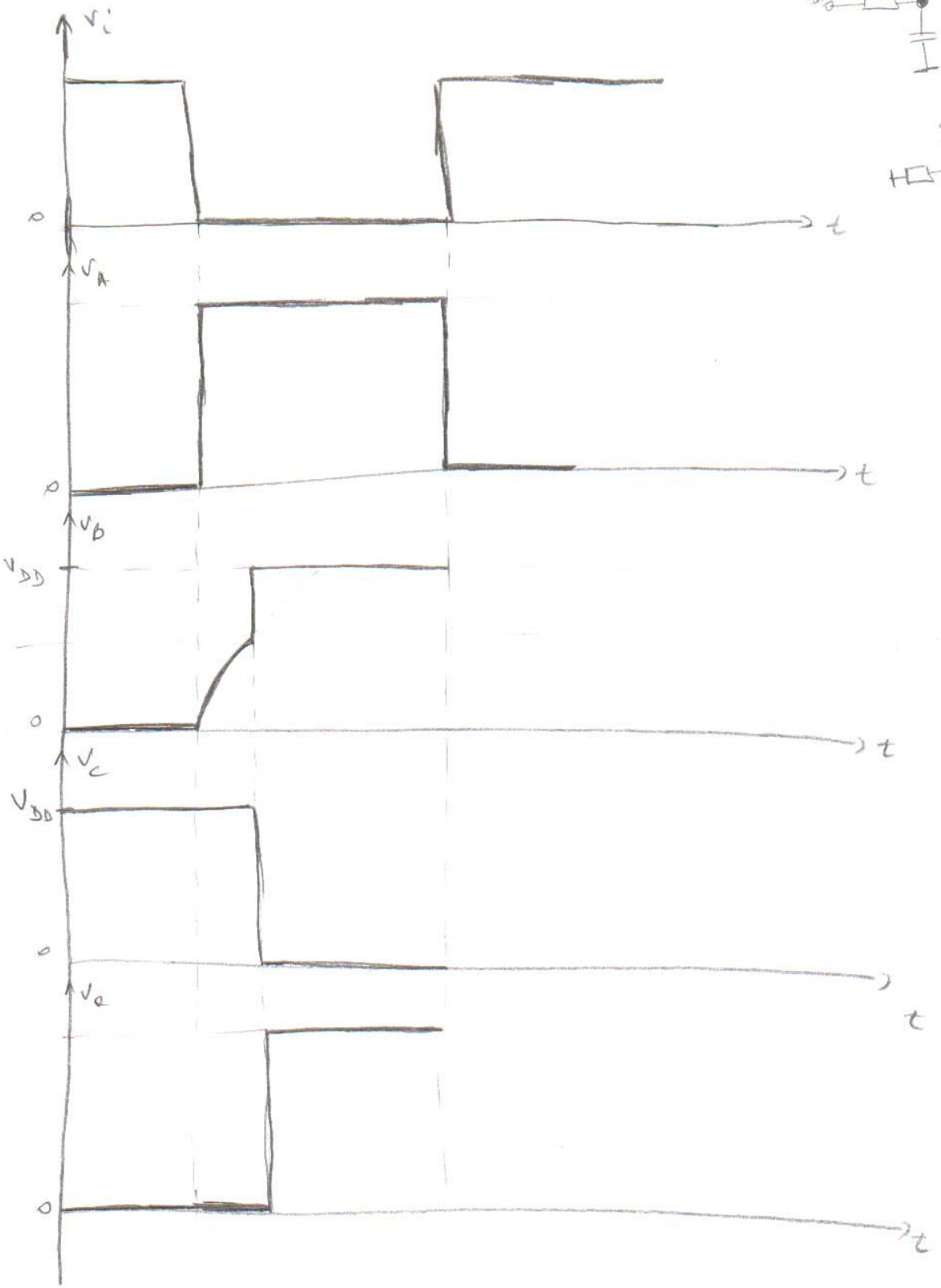

Vi
VDD
0
t
VA
VDD
0
t
VB
VDD/2
0
t
VC
VDD
0
t
Vo
VDD
0
t
R1
R2
+VDD
C
VDD
R1
R2
C

P12

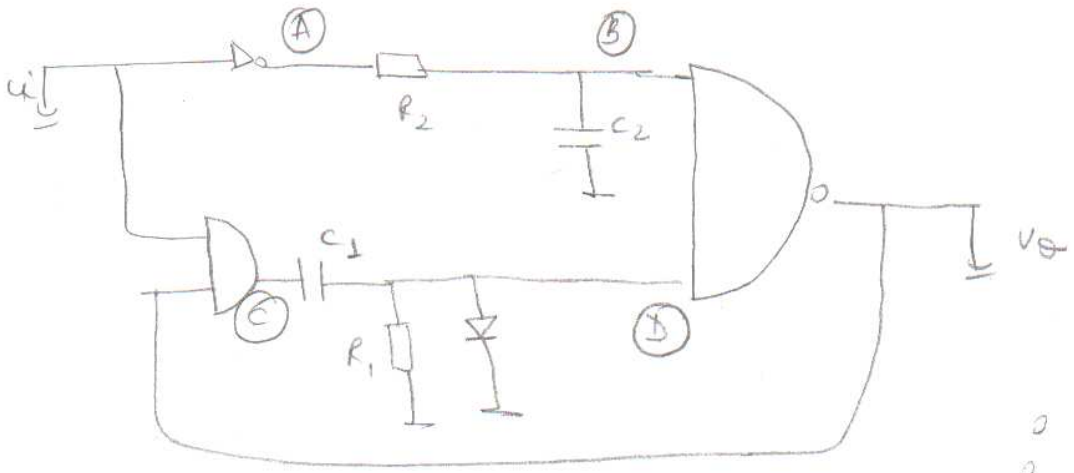

A
B
C
R
C
V_i
V_o


V_{DD}
R
V_{DD}
$V_{DD} - V_D$

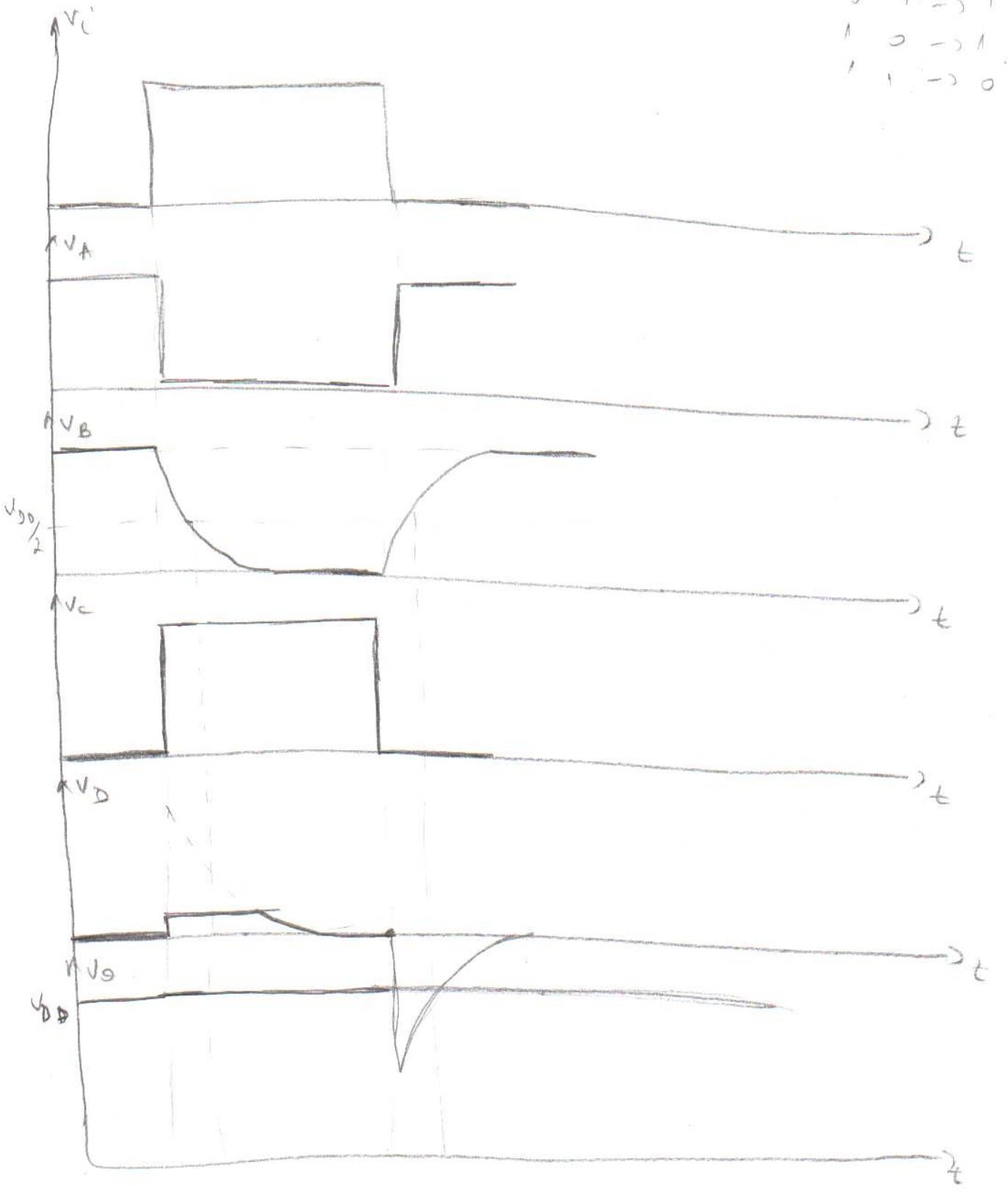

V_{DD}


V_i
0
t
V_A
0
t
V_B
V_{DD}
0
t
V_C
V_{DD}
0
t
V_o
0
t

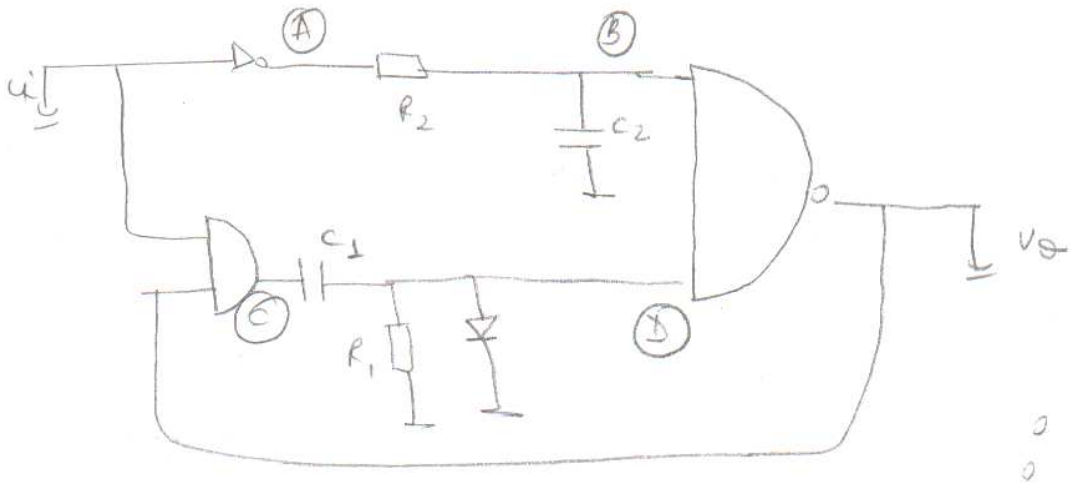
P13



0 0 -> 1
0 1 -> 1
1 0 -> 1
1 1 -> 0



P13



0 0 -> 1
0 1 -> 1
1 0 -> 1
1 1 -> 0