Subject _____

Date / /

AND ADD LDA, STA

CLA INC CMA

Instruction register

Fetch: $R'T_1$: IR

IR as Source:

$R'T_2$: Decoder ← IR(12-14)

I ← IR(15)

Date / / Subject

Design Read in memory.

source ← memory

$\bar{R}T_1$: IR ← M[AR]

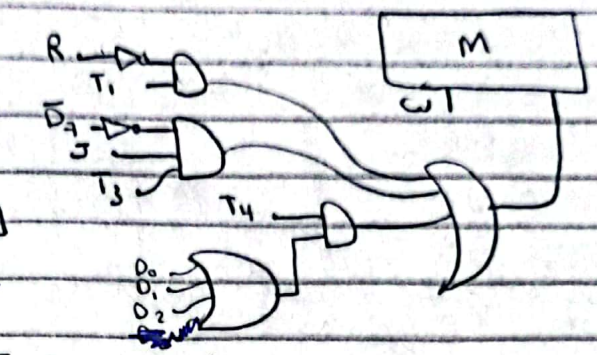
$\bar{D}_7\bar{J}T_3$: AR ← M[AR]

D_0T_4 : OR ← M[AR]

D_1T_4 : OR ← M[AR]

D_2T_4 : OR ← M[AR]

~~D_6T_4 : OR ← M[AR]~~



$Read = \bar{R}T_1 + \bar{D}_7\bar{J}T_3 + T_4(D_0 + D_1 + D_2 + [redacted])$

Design write in memory

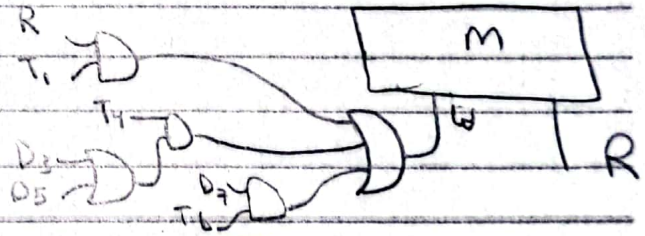
destination ← memory

RT_1 : M[AR] ← TR

D_3T_4 : M[AR] ← AC

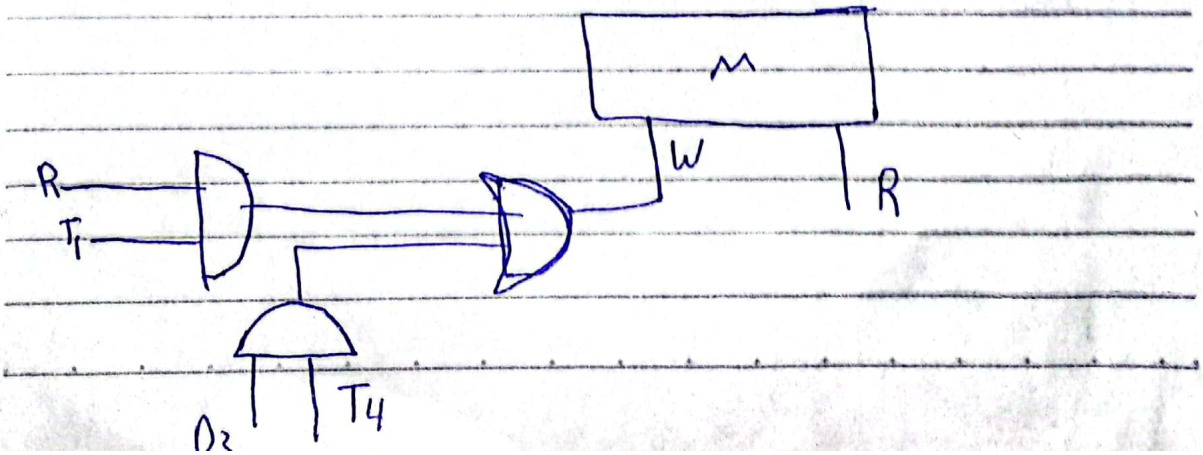
~~D_5T_4 : M[AR] ← PC~~

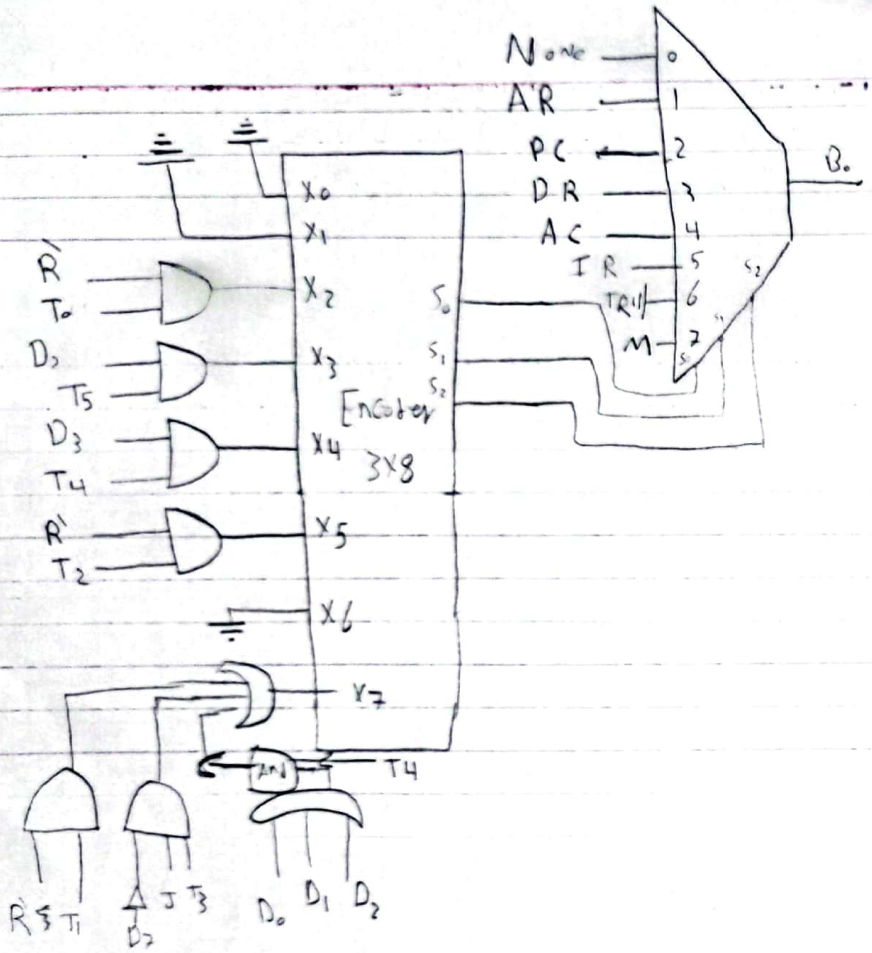
~~D_6T_4 : M[AR] ← DR~~



write = $RT_1 + (D_3 + [redacted])T_4 + [redacted]$

write $RT_1 + D_3T_4$





AR

LD

1. Fetch $R'T_0$ ← $AR \leftarrow PC$
2. Decode $R'T_2$ $AR \leftarrow IR(0-11)$
3. Indirect $D_7 I T_3$ $AR \leftarrow M[AR]$

$\bar{R}.(T_0+T_2)+\bar{D}_7 I T_3$

INR

CIR

AND
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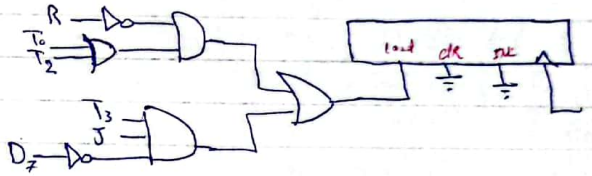
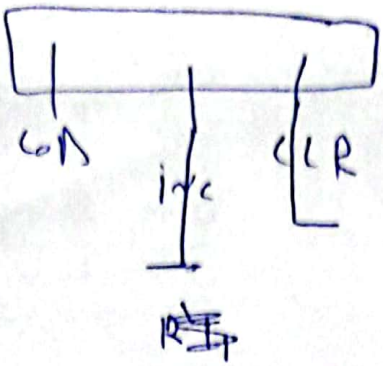
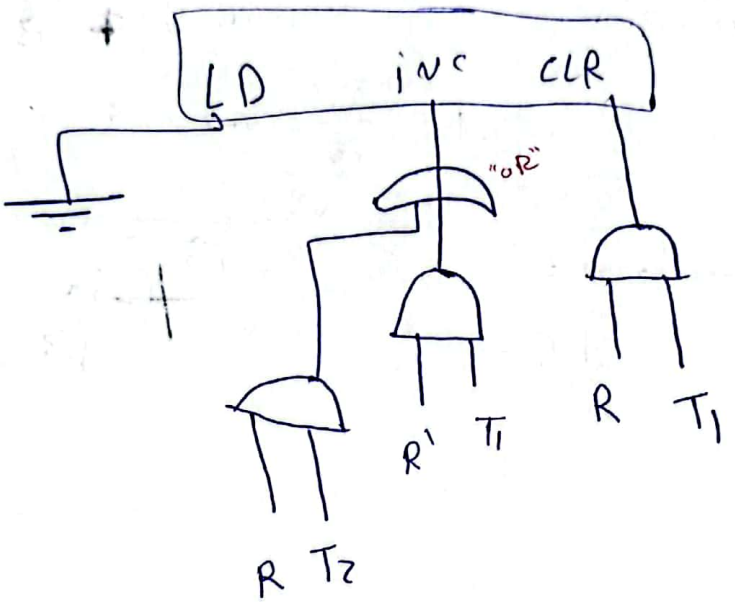


AND $D_0 T_4$

R



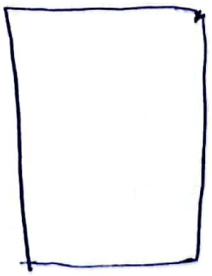
PC

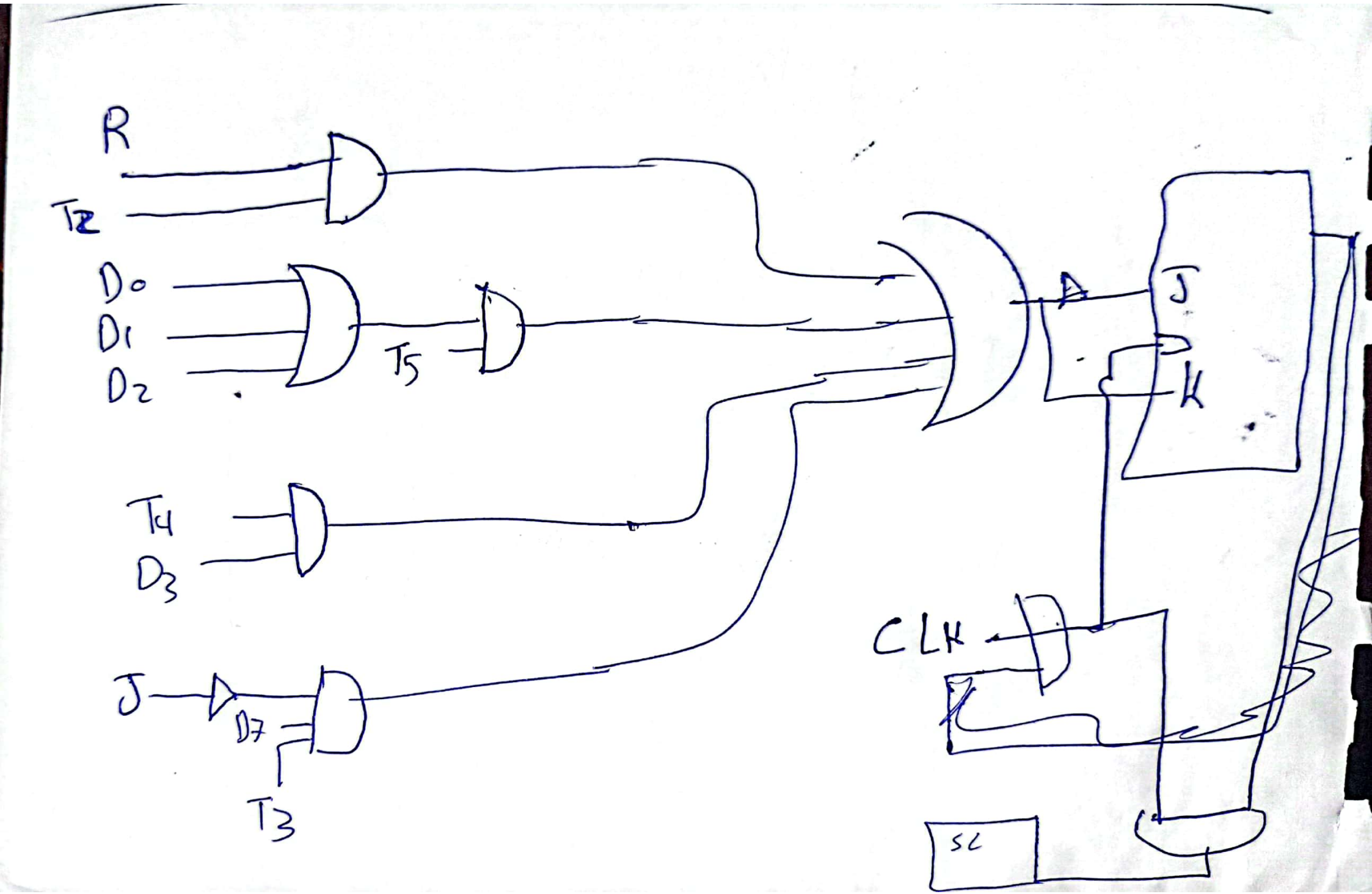


SC

$$RT_2 + D_0 T_5 + D_1 T_5 + D_2 T_5 + D_3 T_4 + D_7 \bar{I} T_3$$

$$RT_2 + (D_0 + D_1 + D_2) T_5 + D_3 T_4 + D_7 \bar{I} T_3$$



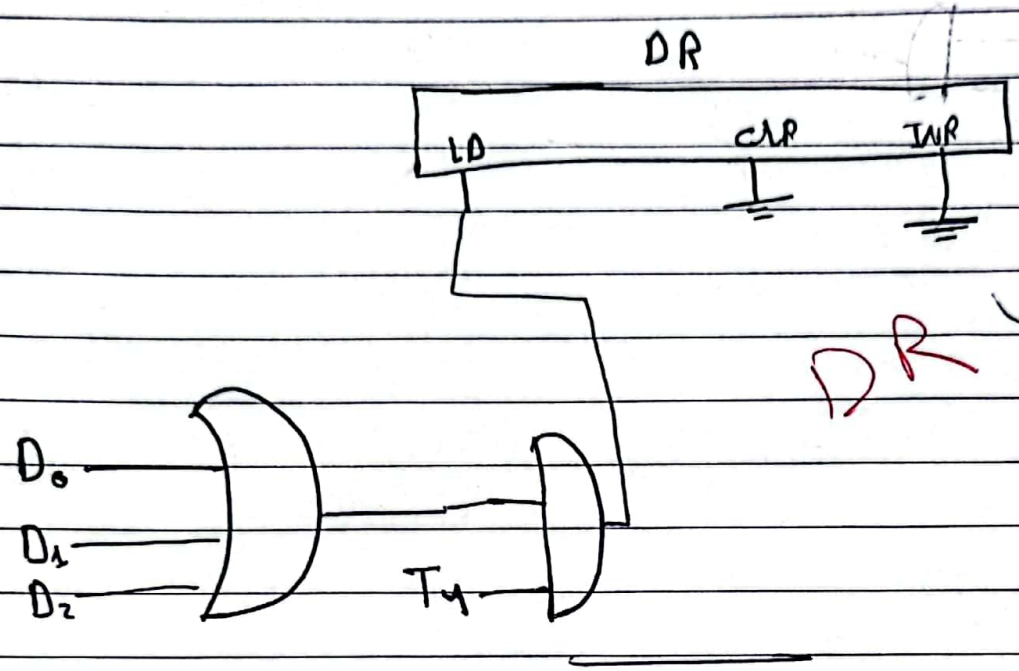

R
T2
D0
D1
D2
T5
T4
D3
J
D7
T3
J
K
CLK
SC

SUBJECT: AND – Add – LDA – STA

CLA – INR – CMA

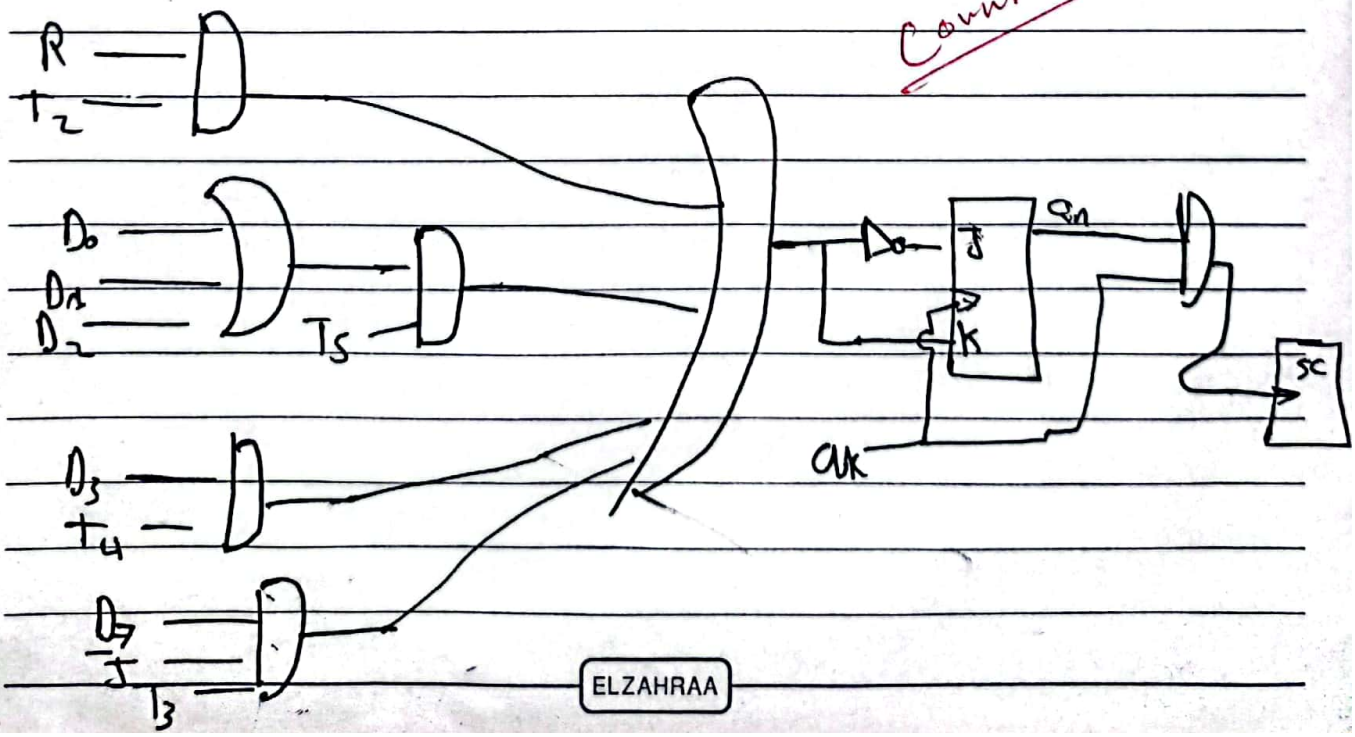
DATE:

LDA: $D_0T_4 + D_1T_4 + D_2T_4 = T_4(D_0 + D_1 + D_2)$



$RT_2 + D_0T_5 + D_1T_5 + D_2T_5 + D_3T_4 + D_7\bar{J}T_3$

$RT_2 + T_5[D_0 + D_1 + D_2] + D_3T_4 + D_7\bar{J}T_3$



ELZAHRAA

SUBJECT: _____ DATE: /

D_2T_S

DR As source