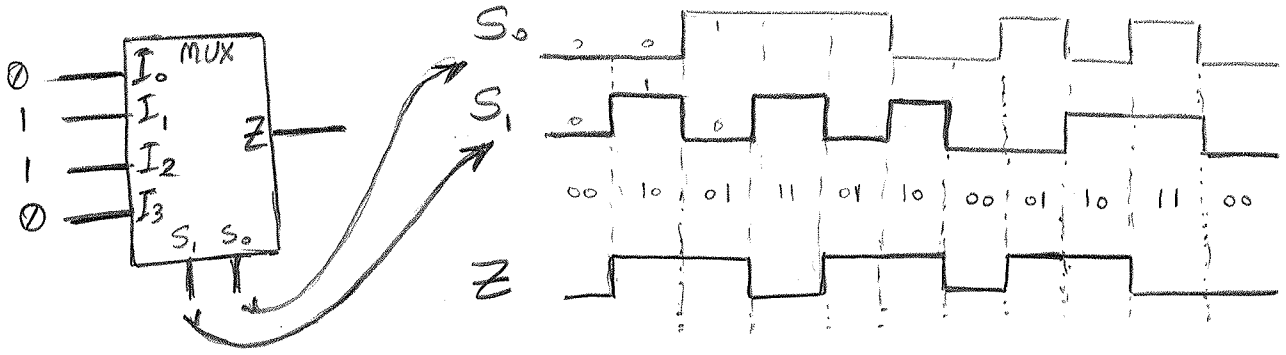
Ch6

29



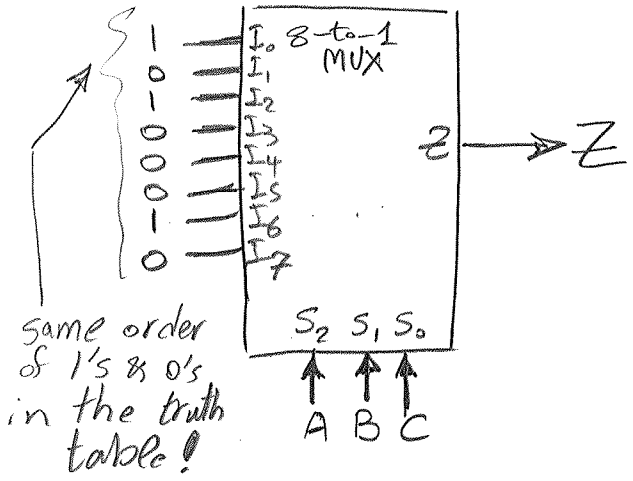
* Implement Z using a Mux:

Given:

A	B	C	Z
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	0

Solution:

Since we have [3] i/p's ⇒ we need to use a Mux with [3] select lines ⇒ 8-to-1



Given: $Z = A + \bar{B}$

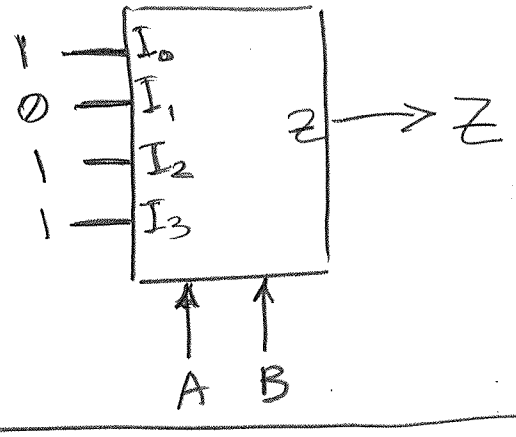
Solution:

First convert to (standard SOP)

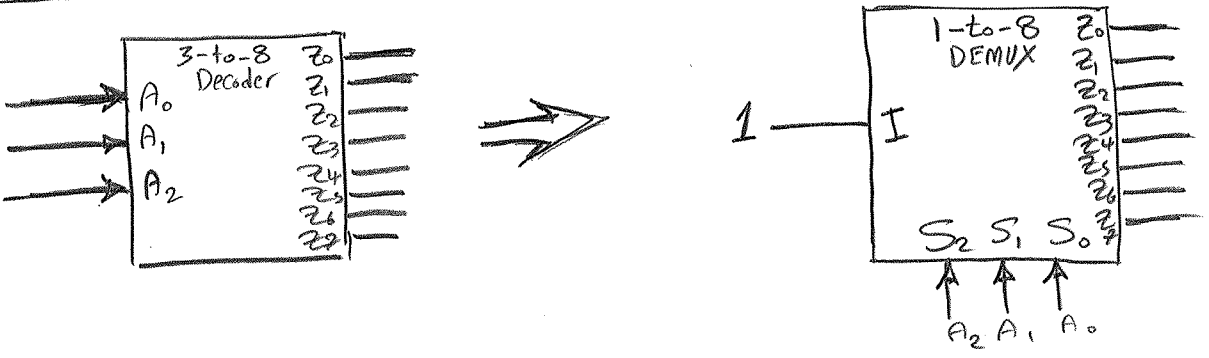
$$Z = A(B+\bar{B}) + (\bar{A}+A)\bar{B}$$
$$= AB + A\bar{B} + \bar{A}\bar{B} + A\bar{B}$$
$$= AB + A\bar{B} + \bar{A}\bar{B}$$

AB → 11 → I_3; $A\bar{B}$ → 10 → I_2; $\bar{A}\bar{B}$ → 00 → I_0

Since we have [2] i/p's ⇒ we need a Mux with [2] select lines ⇒ 4-to-1

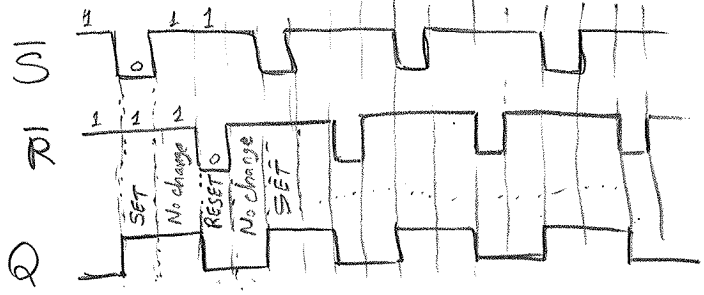


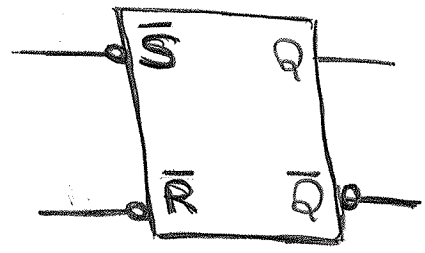
* Implement a 3-to-8 Decoder using a DEMUX



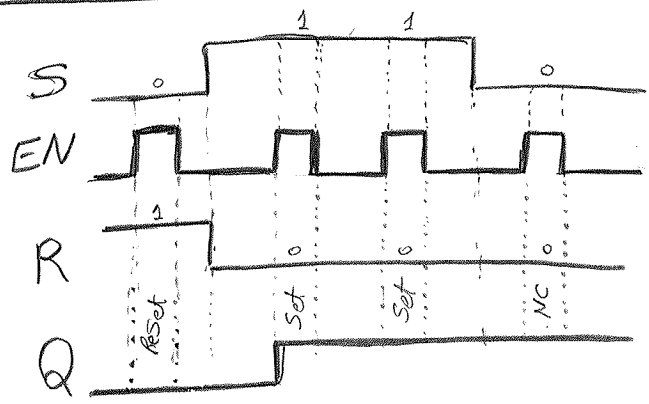
Ch7:

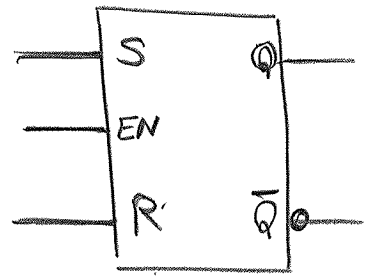
1


S̄
R̄
Q
SET
No change
RESET
No change
SET

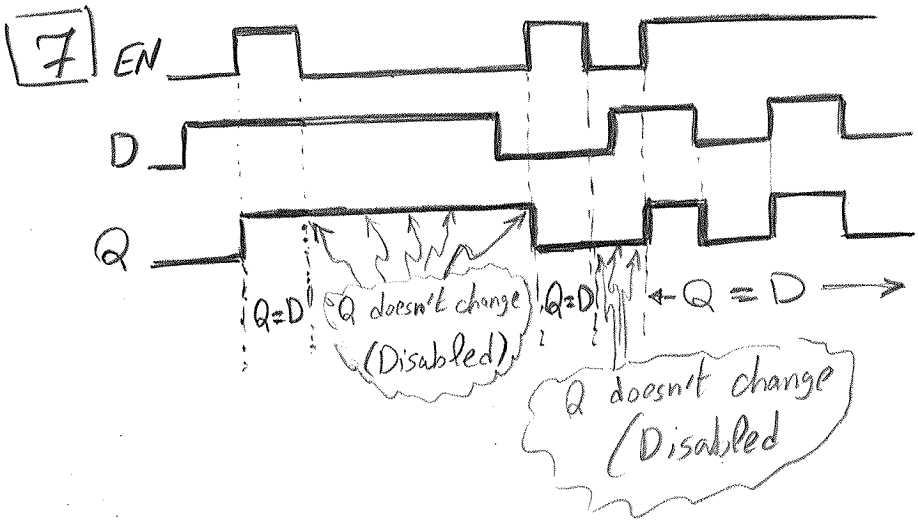

S̄
Q
R̄
Q̄

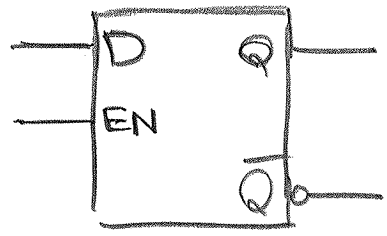
4


S
EN
R
Q
ReSet
Set
Set
NC


S
EN
R
Q
Q̄

7


EN
D
Q
Q=D
Q doesn't change
(Disabled)
Q=D
Q = D
Q doesn't change
(Disabled)


D
EN
Q
Q