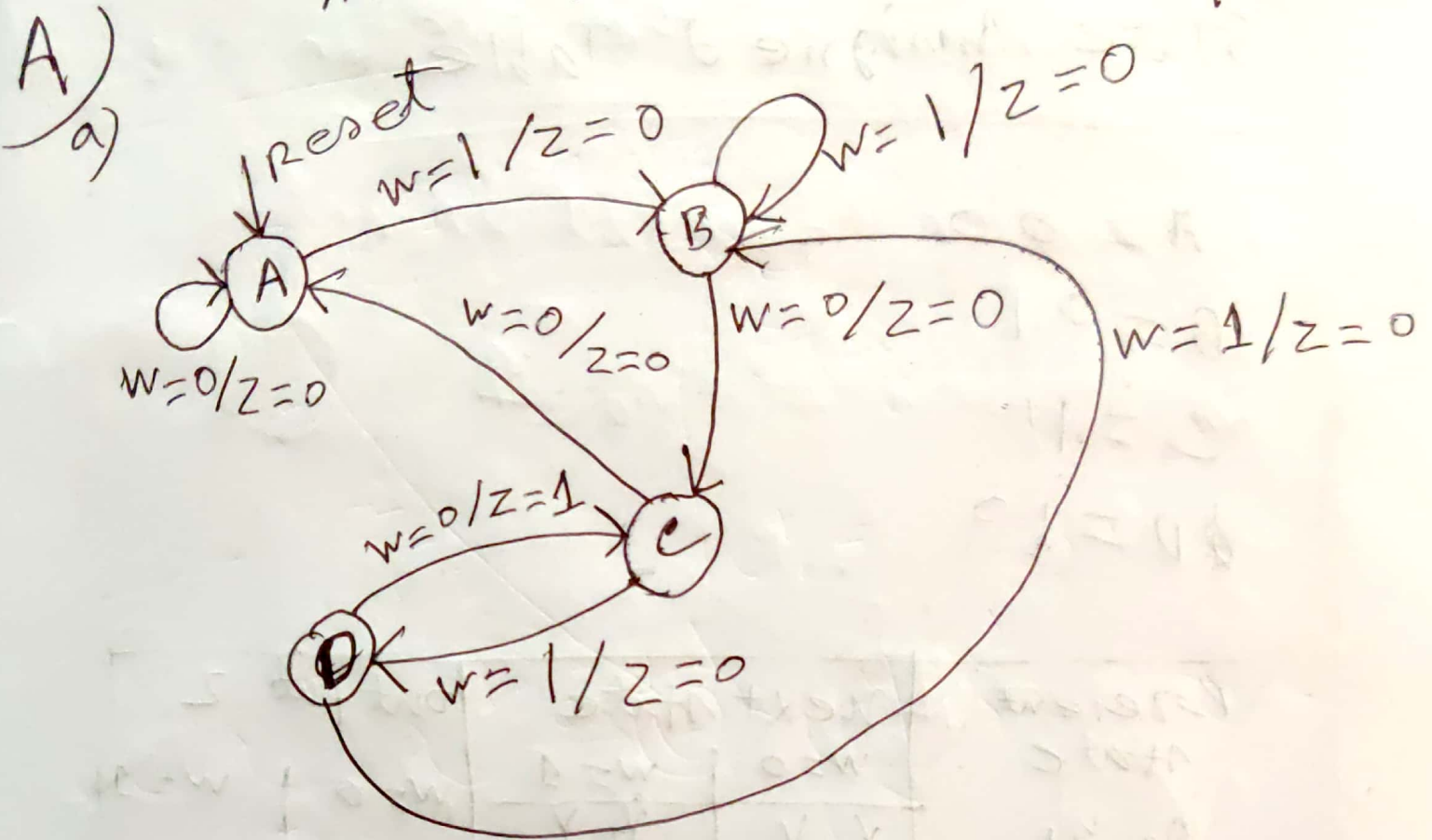


Answer to the question no-1



b) State Table

Present state	Next state		output z	
	$w=0$	$w=1$	$w=0$	$w=1$
A	A	B	0	0
B	C	B	0	0
C	A	D	0	0
D	C	B	1	0

State Assigned Table

$$A = 00$$

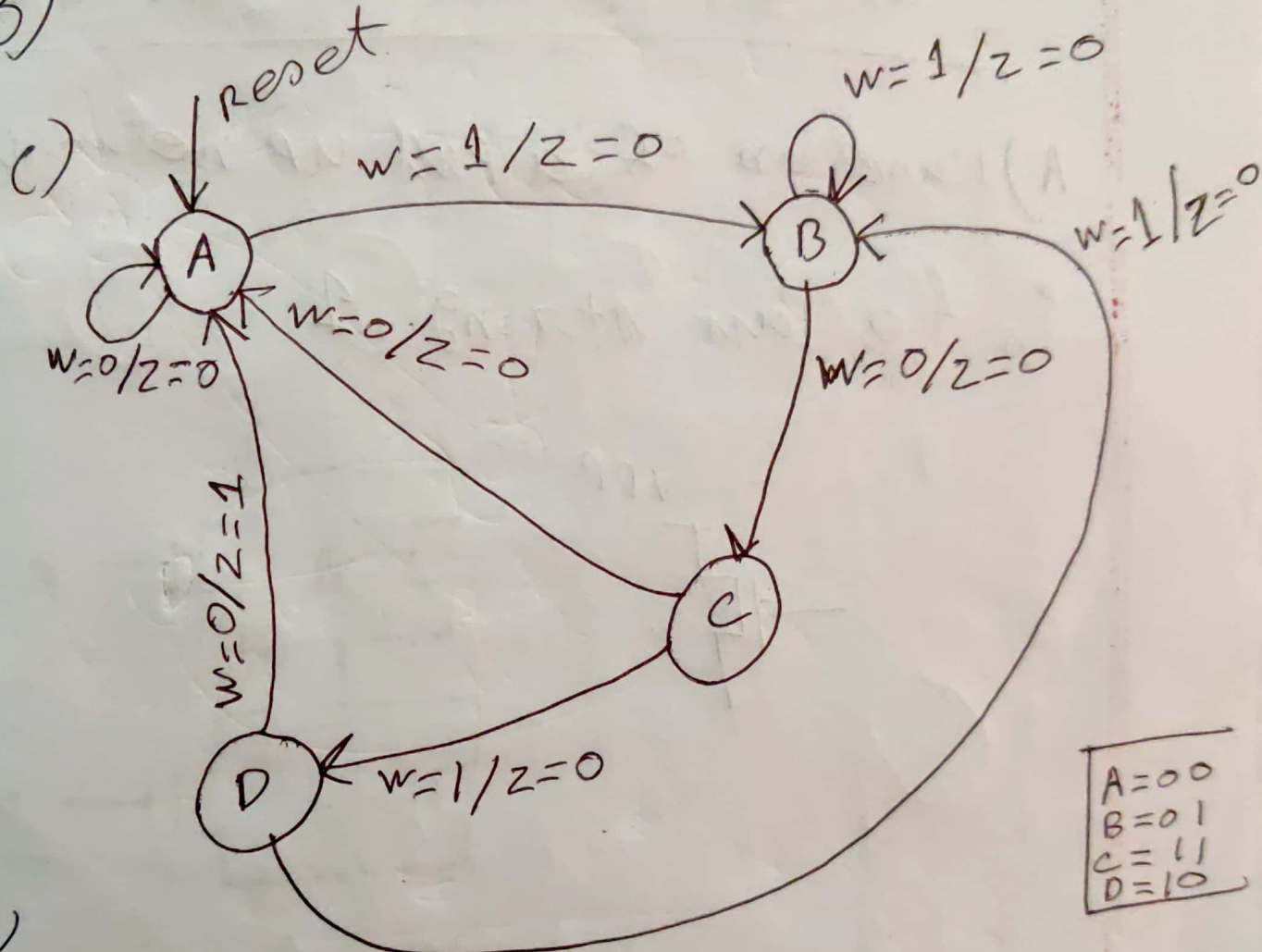
$$B = 01$$

$$C = 11$$

$$D = 10$$

Present state $y_2 y_1$	Next state		out put z	
	$w=0$	$w=1$	$w=0$	$w=1$
	$y_2 y_1$	$y_2 y_1$		
00	00	01	0	0
01	11	01	0	0
11	00	10	0	0
10	11	01	1	0

B)



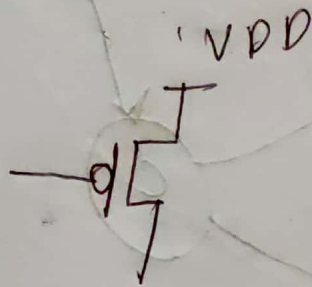
2)

State Assigned Table

Present state $y_2 y_1$	next state		out put Z	
	$w=0$ $y_2 y_1$	$w=1$ $y_2 y_1$	$w=0$	$w=1$
00	00	01	0	0
01	11	01	0	0
11	00	10	0	0
10	00	01	1	0

Answer to the question no-12

A) Function of a pull up network is to pass strong 1

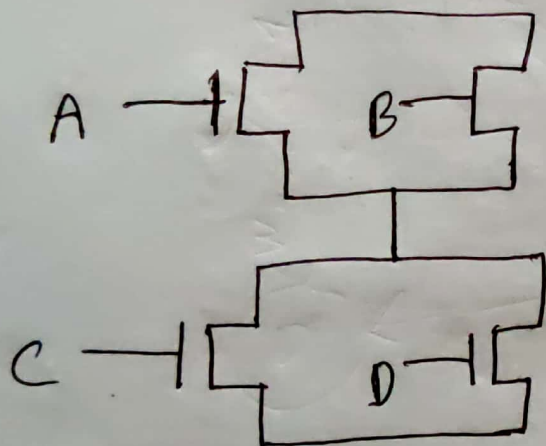


Input	Output	Input	Output	Input	Output
0	1	0	1	0	1
0	1	1	0	1	0
1	0	1	0	1	0
1	0	0	1	0	1

B)

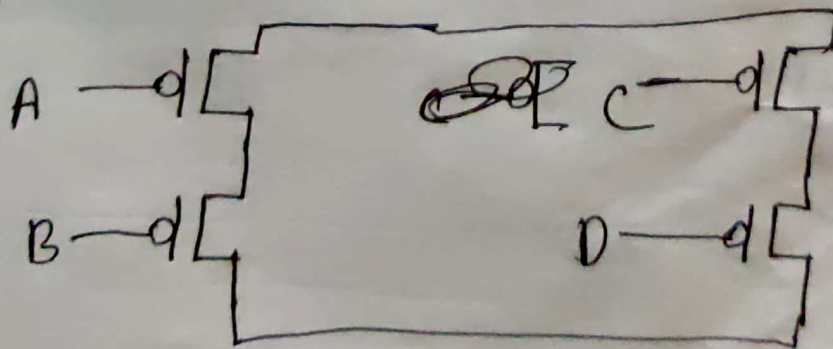
$$F = (A + B) \cdot (C + D)$$

Pull down network

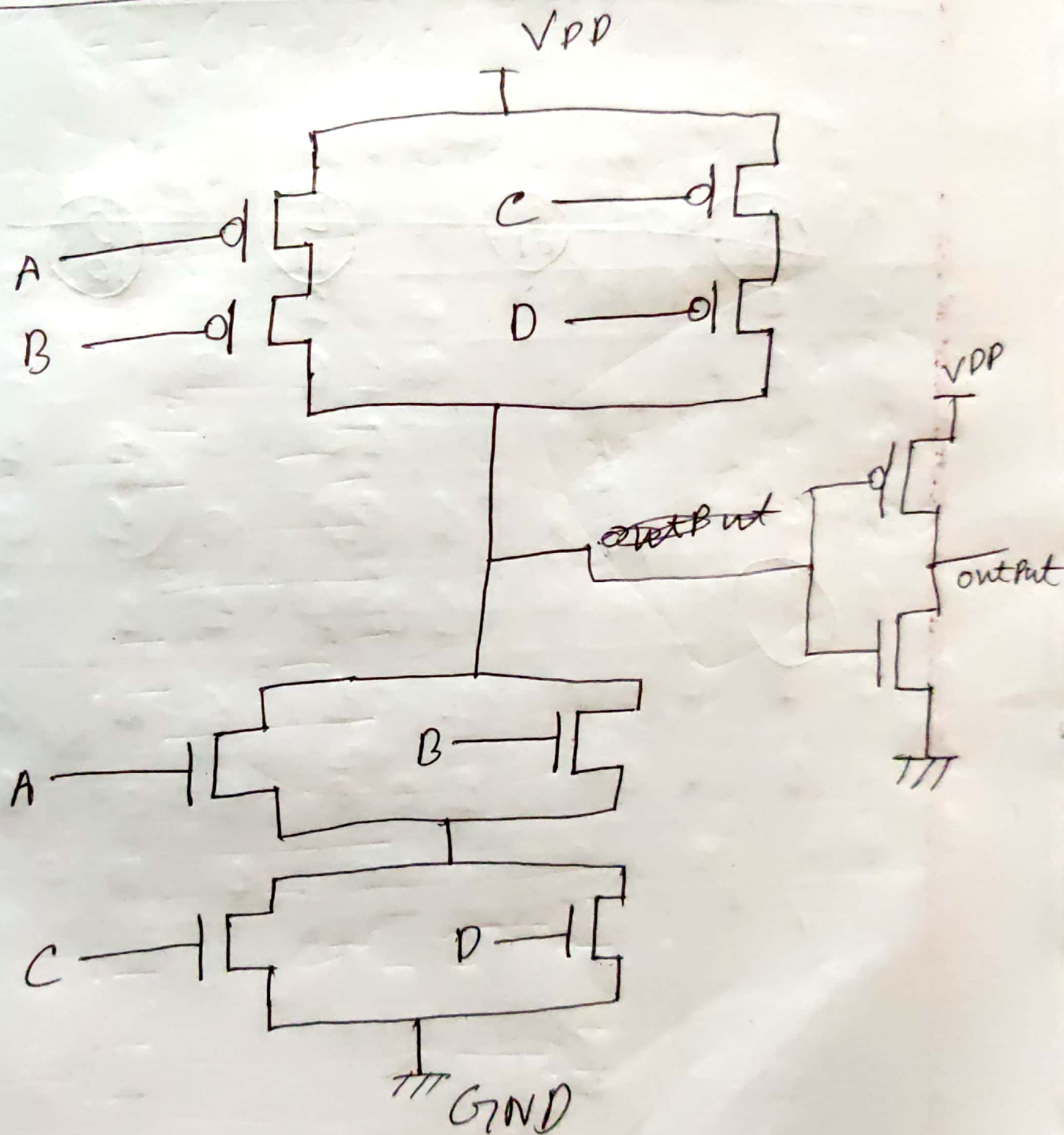


Actual CMOS
Gate in
in later
page

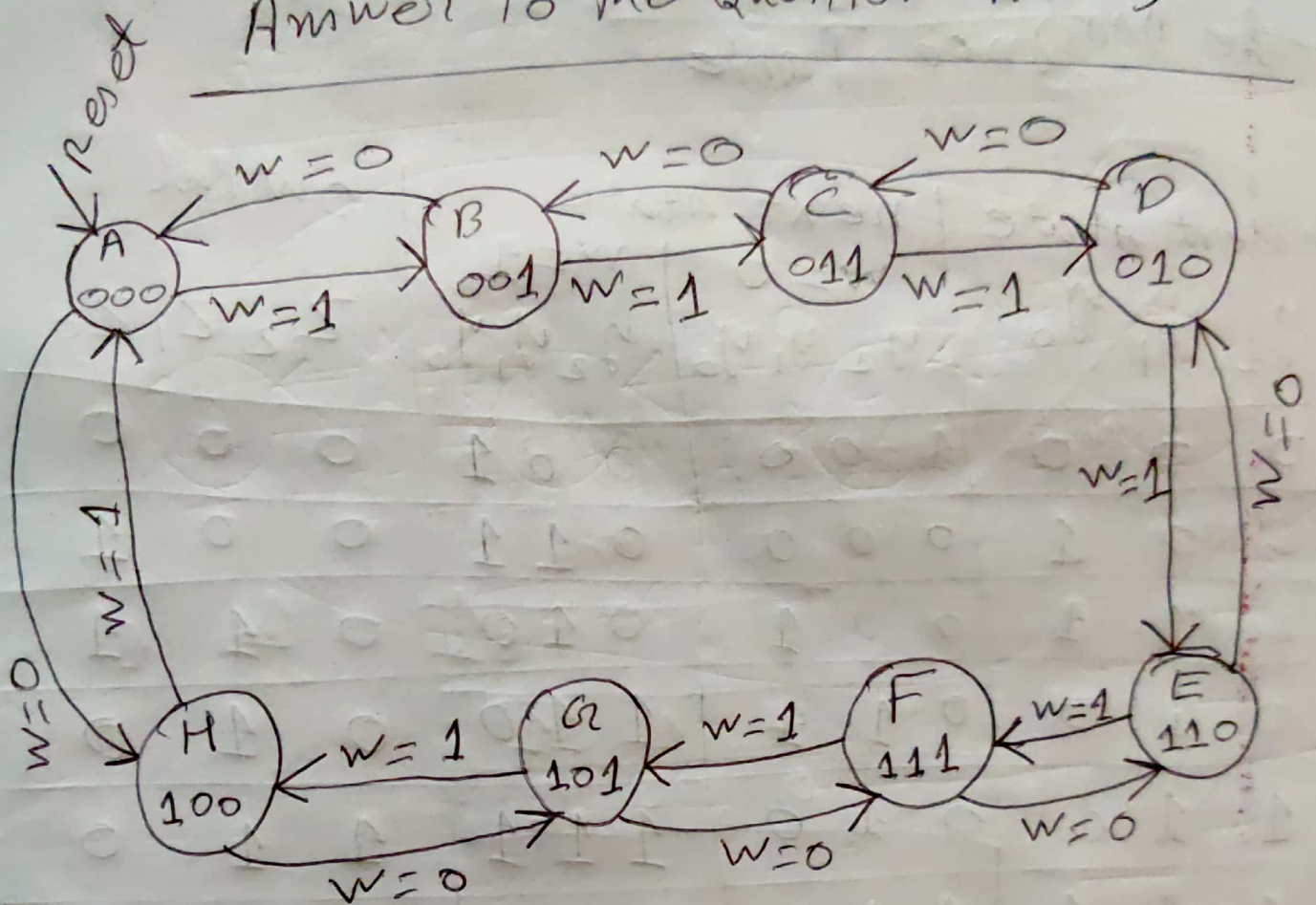
Pull up network



CMOS gate



Answer to the question no-3



A

State Assigned Table

Present state $y_2 y_1 y_0$	next state		Output $z_2 z_1 z_0$
	$w=0$ $y_2 y_1 y_0$	$w=1$ $y_2 y_1 y_0$	
0 0 0	1 0 0	0 0 1	0 0 0
0 0 1	0 0 0	0 1 1	0 0 1
0 1 1	0 0 1	0 1 0	0 1 1
0 1 0	0 1 1	1 1 0	0 1 0
1 1 0	0 1 0	1 1 1	1 1 0
1 1 1	1 1 0	1 0 1	1 1 1
1 0 1	1 1 1	1 0 0	1 0 1
1 0 0	1 0 1	0 0 0	1 0 0

B) output variable

for z_0

$y_2 \backslash y_1 y_0$	00	01	11	10
0	0	1	1	0
1	0	1	1	0

$$z_0 = y_0$$

for z_1

$y_2 \backslash y_1 y_0$	00	01	11	10
0	0	0	1	1
1	0	0	1	1

$$z_1 = y_1$$

for z_2

$y_2 \backslash y_1 y_0$	00	01	11	10
0	0	0	0	0
1	1	1	1	1

$$z_2 = y_2$$

Next state
for

~~W~~

y_2

$y_1 y_0$

$w y_2$

	00	01	11	10
00	1	0	0	0
01	1	1	1	0
11	0	1	1	1
10	0	0	0	1

$$y_2 = w' y_1' y_0' + y_2 y_0 + w y_1 y_0'$$

502

y_1

$w_2 y_2$	$w_1 y_1$	00	01	11	10
00	0	0	0	0	1
01	0	1	1	1	1
11	0	0	0	0	1
10	0	1	1	1	1

$$y_1 = y_1 y_0 + w_2 y_2' y_0 + w_1 y_2 y_0$$

502

y_0

$w_2 y_2$	$w_1 y_1$	00	01	11	10
00	0	0	1	1	1
01	1	1	0	0	0
11	0	0	1	1	1
10	1	1	0	0	0

~~$$y_0 = w_2' y_2' y_1 + w_1' y_2' y_1$$~~

$$y_0 = w_2' y_2' y_1 + w_1' y_2' y_1 + w_2 y_2 y_1 + w_1 y_2 y_1$$