Manuel
Alcala
4-24-20

HW#5 - Ch. 7 # 1, 2, 4, 7, 8, 12, 14, 21, 25

1) $\overline{S}$ -
$\overline{R}$ -
Q -

Active-LOW Input

$\overline{S}$	$\overline{R}$	Q	$\overline{Q}$	
1	1	NC	NC	
0	1	1	0	- Set
1	0	0	1	- Reset
0	0	1	1	

2) Active HIGH S-R Latch

S -
R -
Q -

S	R	Q	$\overline{Q}$
0	0	NC	NC
1	0	1	0
0	1	0	1
1	1	Ø	Ø

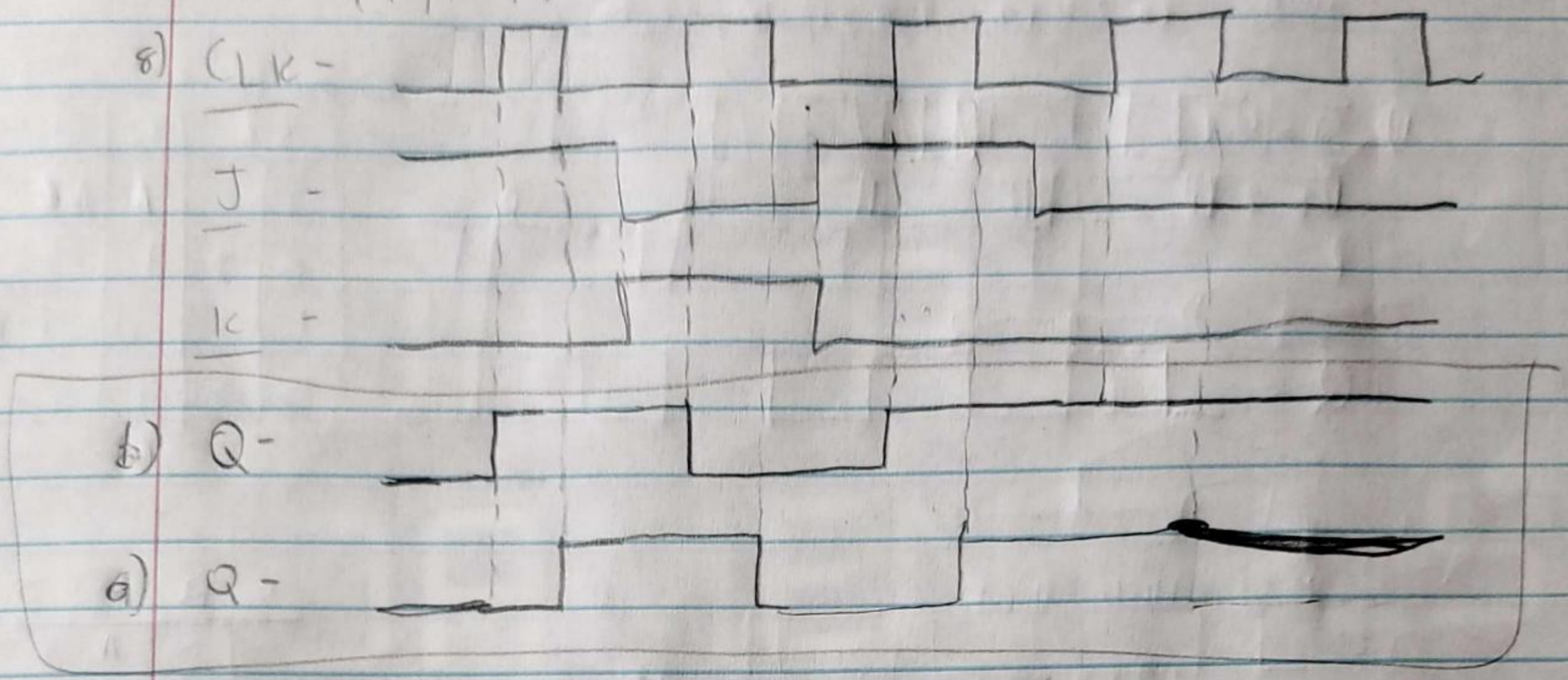
4) S -
EN -
R -
Q -
$\overline{Q}$ -

7) EN -
D -
Q -

D	EN	Q	
1	1	1	(set)
0	1	0	(reset)

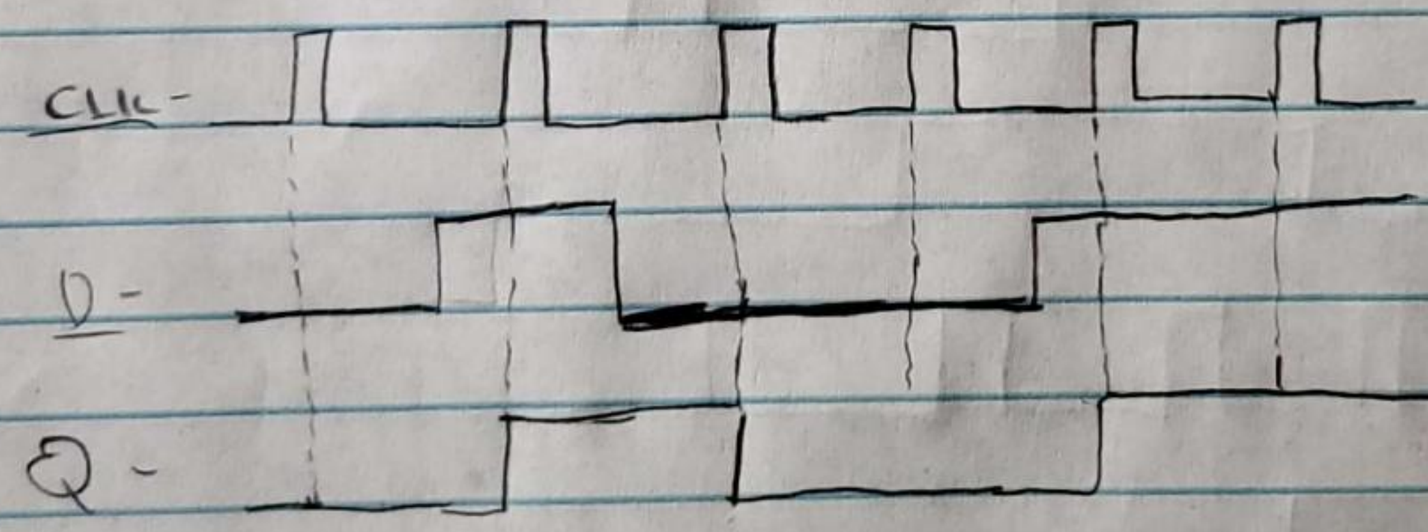
CLK	J	K	Q	$\overline{Q}$
↓	0	0	NC	NC
↓	0	1	0	1
↓	1	0	1	0
↓	1	1	$\not{0}$	$\not{1}$

8)

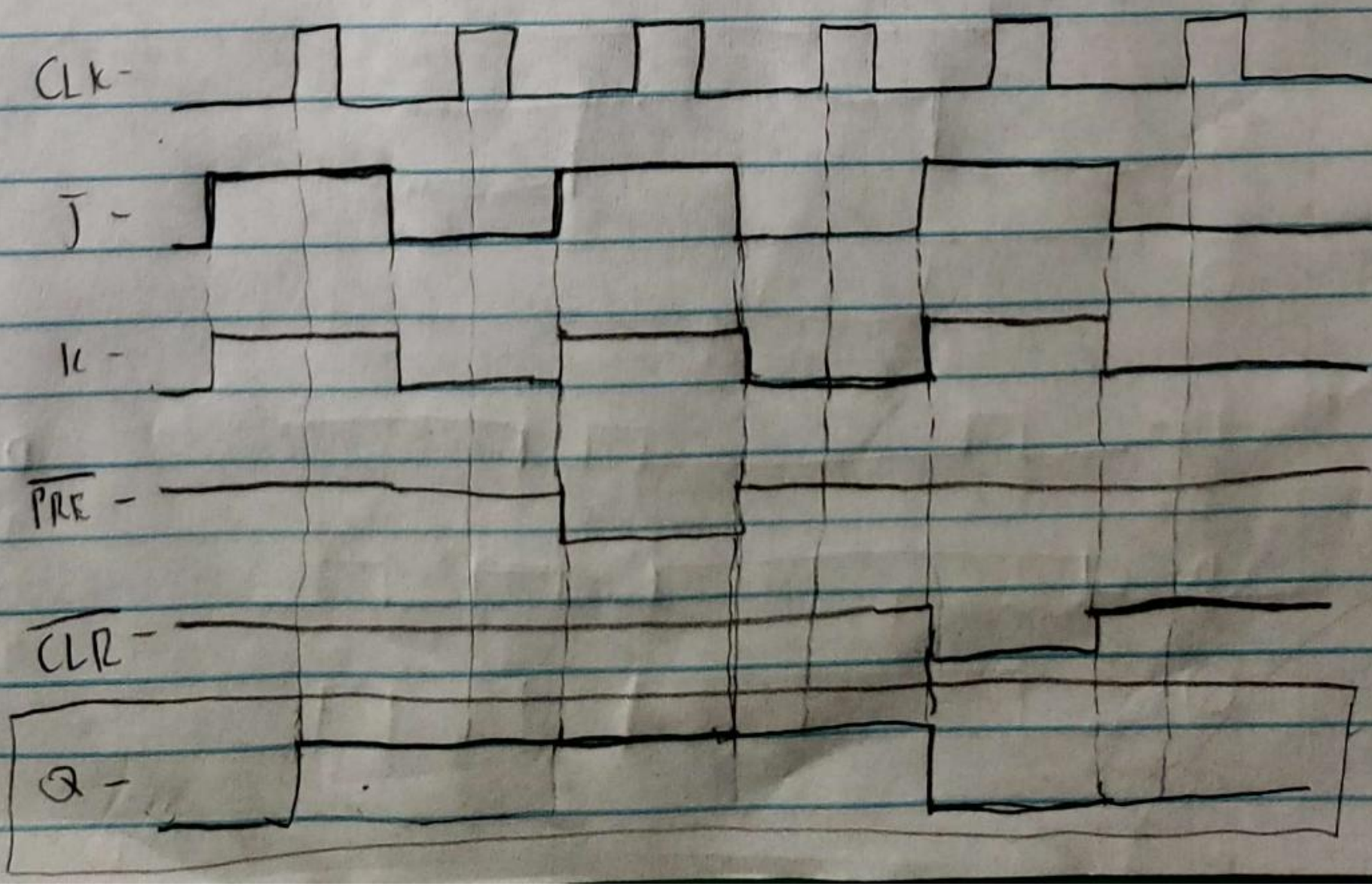


- The difference between the two, is that "a" has the clock inverter and "b" does not. The output with the negative flip-flop shifted to the right, and with the regular output, the waveform shifts to the right.

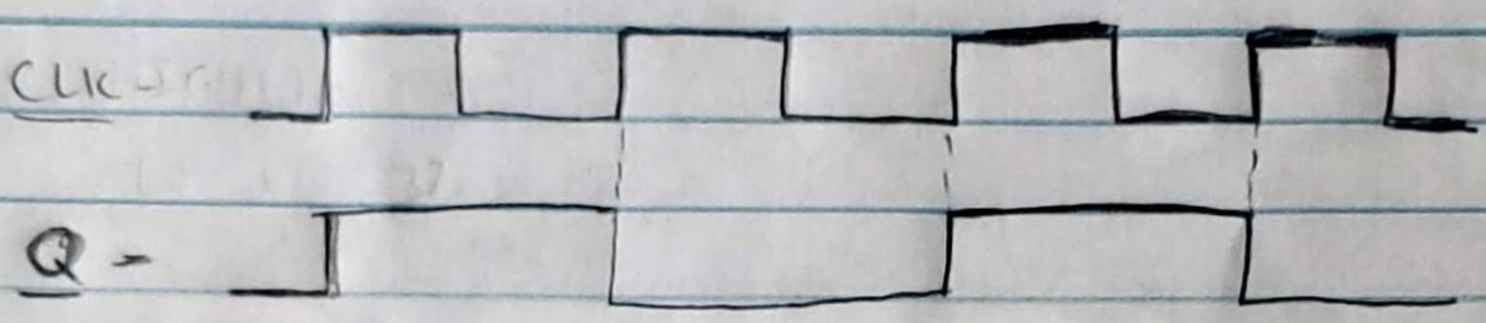
12)



14)



25)



This function is divided the frequency of the periodic waveform.

26) $f = 1/t + 1/t = 1/30 \cdot 10^{-9}\,s + 1/37 \cdot 10^{-9}\,s \approx 2.7 \cdot 10^{35}\,s$

$f = 3.7 \cdot 10^{-36}\,Hz$

MIN. HIGH = 30ns

MIN. LOW = 37ns