Adel Fallatah

Q # 6

J

K

Q1   Q2   Q3

C   C   C
1bit   1bit   1bit
$\overline{Q_1}$ $\overline{Q_2}$ $\overline{Q_3}$

Serial
Data In

Q_3 Q_2 Q_1

D Q   D Q   D Q
FFA   FFB   FFB
Clk   Clk   Clk

Colck

GND

D_2 D_3

Q8

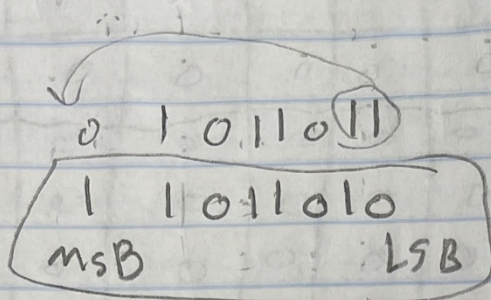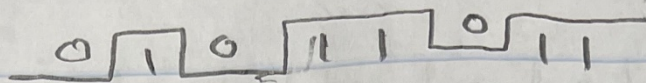|	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0	0	0	0
4	1	0	1	0	0	0	0	0	0	0
5	0	1	0	1	0	0	0	0	0	0
6	0	0	1	0	1	0	0	0	0	0
7	1	0	0	0	0	1	0	0	0	0
8	0	1	0	0	0	0	1	0	0	0
9	1	1	1	0	0	1	0	1	0	0
10	0	1	1	1	0	0	1	0	1	0
11	0	0	1	1	0	0	0	1	0	1
12	1	0	0	1	1	1	0	0	1	0
13	0	1	0	0	1	1	0	0	0	1
14	0	0	1	0	0	1	1	1	0	0
15	1	0	0	1	0	0	1	1	1	0
16	1	1	0	0	1	0	0	1	1	1
17	0	1	1	0	0	1	0	0	1	1
18	1	0	1	1	0	0	1	0	0	1
19	1	1	0	1	1	0	0	1	0	0
20	0	1	1	0	1	1	1	0	1	0
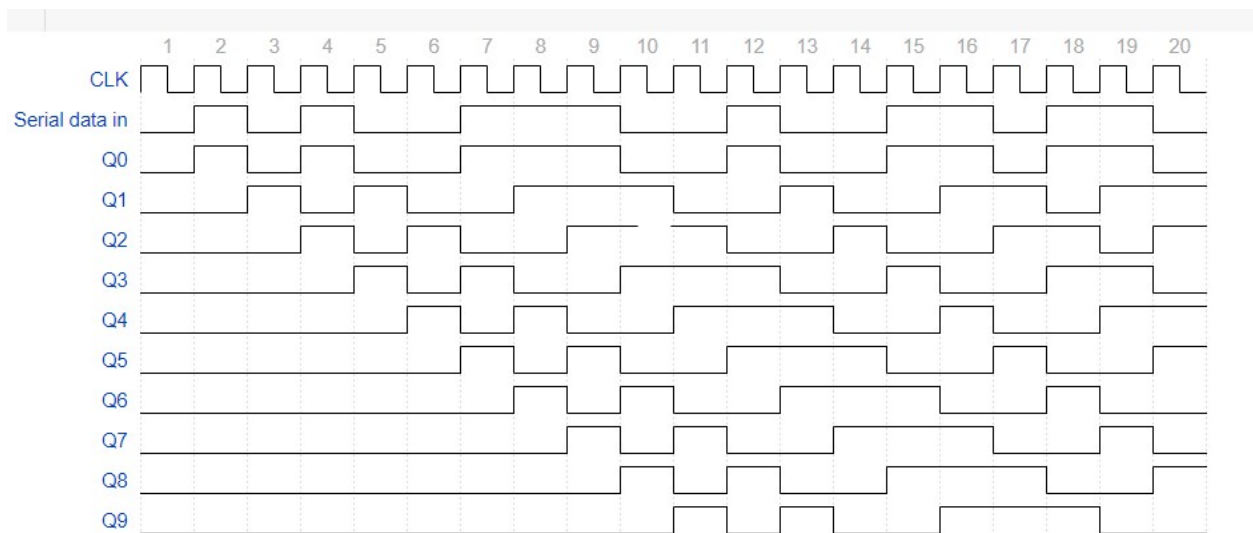
{"signal": [

{ "name": "CLK", "wave": "p................."},

{ "name": "Serial data in", "wave":"lhlhl.h..l.hl.h.lh.l"},

{ "name": "Q0", "wave":"lhlhl.h..l.hl.h.lh.l"},

{ "name": "Q1", "wave":"l.hlhl.h..l.hl.h.lh."},

{ "name": "Q2", "wave":"l..hlhl.h..l.hl.h.lh"},

{ "name": "Q3", "wave":"l...hlhl.h..l.hl.h.l"},

{ "name": "Q4", "wave":"l....hlhl.h..l.hl.h."},

{ "name": "Q5", "wave":"l.....hlhl.h..l.hl.h"},

{ "name": "Q6", "wave":"l......hlhl.h..l.hl."},

{ "name": "Q7", "wave":"l.......hlhl.h..l.hl"},

{ "name": "Q8", "wave":"l........hlhl.h..l.h"},

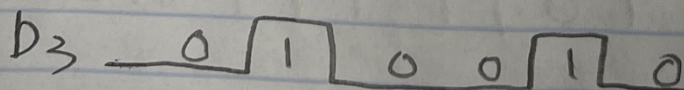{ "name": "Q9", "wave":"l.........hlhl.h..l."}],

"head":{"tock":1} }

lo Q   waveform: 0 1 0 1 1 0 1 1

0 1 0 1 1 0 (1 1)

1 1 0 1 1 0 1 0
msB   LSB

Q14

CLK	Sh/Lo	D0	D1	D2	D3
1	0	1	0	1	0
2	1	0	1	0	1
3	1	0	0	1	0
4	0	0	0	1	0
5	1	0	0	0	1
6	1	0	0	0	0

D3   waveform: 0 1 0 0 1 0

Q21

Clok	R/L̄	state
CLK1	left	01001100
CLK2	Right	10011000
CLK3	Right	01001100
CLK4	Right	00100110
CLK5	Left	00010011
CLK6	Left	00100110
CLK7	Right	01001100
CLK8	Left	00100110
CLK9	Right	01001100
CLK10	Left	00100110
CLK11	left	01001100
		10011000

Q 28

Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
0	0	0	0	1	0	0	0	1	0
0	0	0	0	0	1	0	0	0	1
1	0	0	0	0	0	1	0	0	0
0	1	0	0	0	0	0	1	0	0
0	0	1	0	0	0	0	0	1	0
0	0	0	1	0	0	0	0	0	1
0	0	0	0	1	0	0	0	0	0
0	0	0	0	0	1	0	0	0	0
1	0	0	0	0	0	1	0	0	0
0	1	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	1	0
0	0	0	1	0	0	0	0	0	1
1	0	0	0	1	0	0	0	0	0
0	1	0	0	0	1	0	0	0	0
0	0	1	0	0	0	1	0	0	0
0	0	0	1	0	0	0	1	0	0

Reset $Q_0 = 0\ 0\ 0\ 0\ 1\ 0\ 0\ 0\ 1\ 0$