Abdullah Aletaibi   HW6

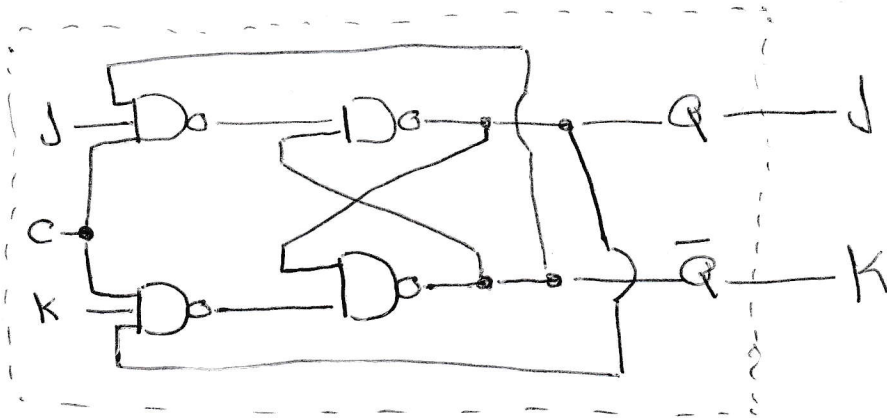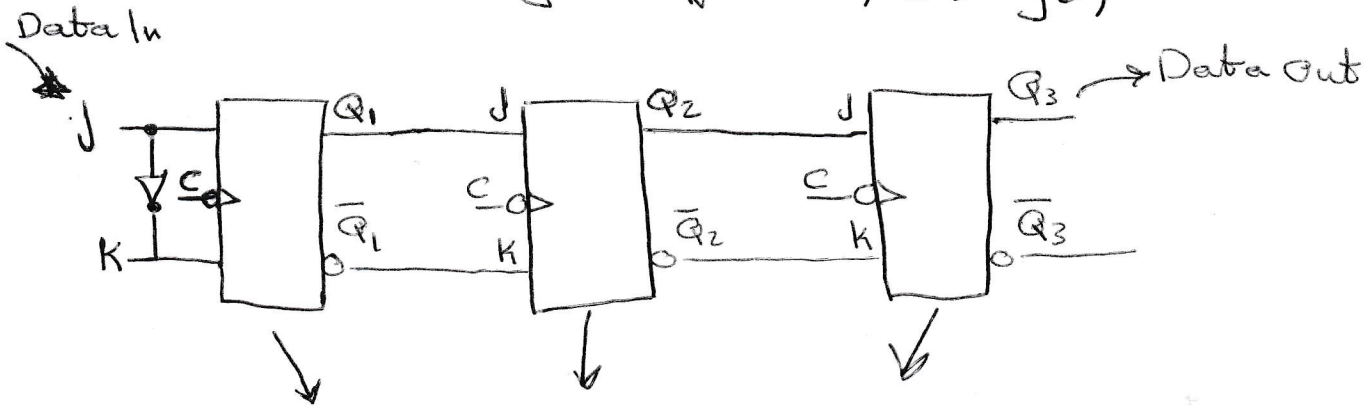   PT1

[6] Serial Shift Register (3 bit/stage)

Data In

[8] See "Question # 8" in waveform.

[10] Data Out where left-most is LSB

    is 110 1101 0

[14] See "Question # 14" in waveform.

| CLK	R/$\bar{L}$	state	
CLK 0 — initial	—	01001100	
CLK 1	0	10011000	(Left shift)
2	1	01001100	(Right ∥)
3	1	00100110	(Right ∥)
4	1	00010011	(Right ∥)
5	0	00100110	(Left ∥)
6	0	01001100	(Left ∥)
7	1	00100110	(Right ∥)
8	0	01001100	(Left ∥)
9	1	00100110	(Right ∥)
10	0	01001100	(Left ∥)
11	0	10011000	(Left ∥)

Answer →

Q_0	Q_1	Q_2	Q_3	Q_4	Q_5	Q_6	Q_7	Q_8	Q_9
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	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	~~1~~	0	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0	0	1
0	0	0	1	1	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	1	0	0
1	0	0	0	0	0	0	1	1	0
0	1	0	0	0	0	0	0	0	1
0	0	0	1	1	0	0	0	0	0
0	0	0	0	1	~~0~~	0	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	0	1	0					

Preset = Q_0 = [0 0 0 0 1 0 0 0 1 0]

Q14
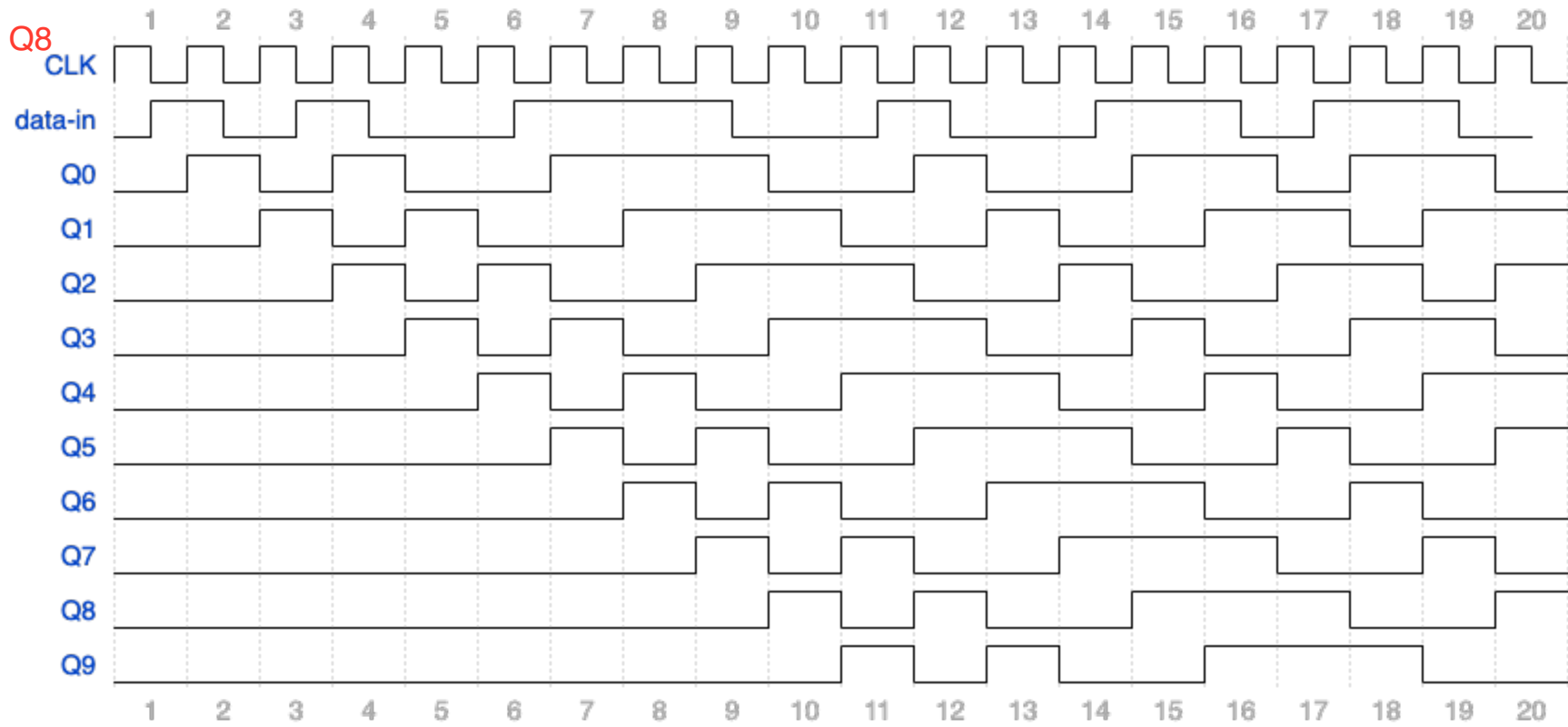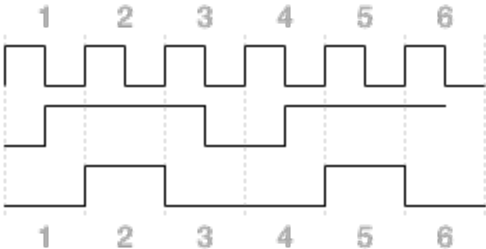
```json
{
  // question #8
    "signal":
        [


        { "name": "CLK", "wave": "p.................."},
        { "name": "data-in", "wave":
"lhlhl.h..l.hl.h.lh.l","phase":0.5},
                            { "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
        },
    "foot":
        {
                "tock":1
        }
}
```

```json
{
  // question #14
        "signal":
                [

          { "name": "CLK", "wave": "p....."},
          { "name": "Shift/NotLoad", "wave": "lh.lh.","phase":0.5},
                { "name": "Data-Out", "wave":"lhl.hl"}

                ],
        "head":
                {
                        "tock":1
                },
        "foot":
                {
                        "tock":1
                }
}
```