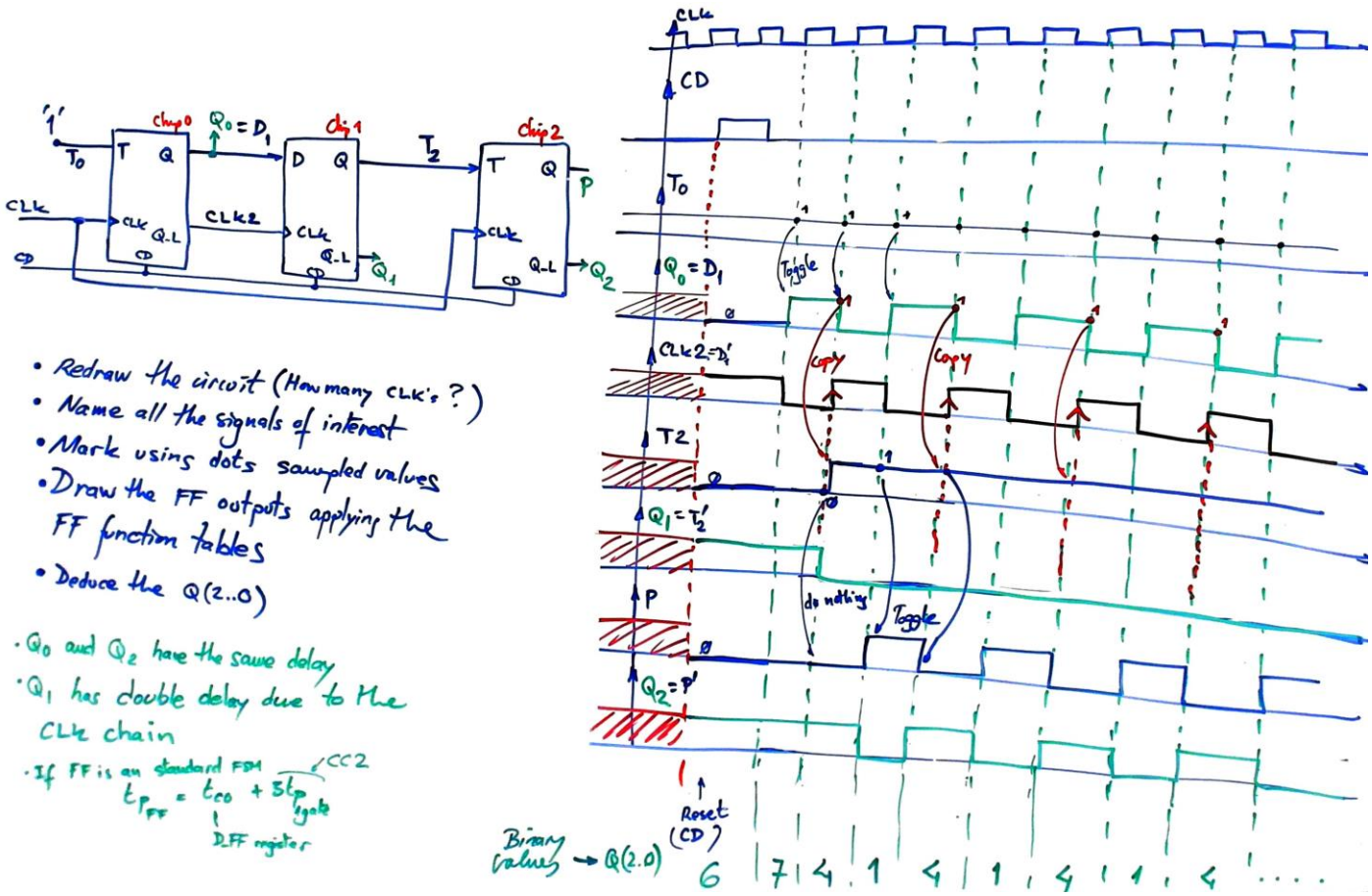
Problem 1. P5, LAB5: On the use of FF, asynchronous circuits (this is the circuit in Proteus)



- Redraw the circuit (How many CLK's ?)
- Name all the signals of interest
- Mark using dots sampled values
- Draw the FF outputs applying the FF function tables
- Deduce the Q(2..0)

- Q_0 and Q_2 have the same delay
- Q_1 has double delay due to the CLK chain
- If FF is an standard FDM (CC2) $t_{PFF} = t_{CO} + 3t_{Pgate}$ (D FF register)

Problem 2 P9, LAB9: basic I/O and software organisation.

Problem 3 P7, L7.3: counter truncation and chaining

Problem 4 D2.5 – D3.5 Electronic LED dimmer, Johnson generator, 1-bit sequencing

Problem 5 D2.23 – D3.23 earbuds, touch sensor, click pattern sampling and decoding

Problem 6 D2.6 - D3.6 LED pattern or 7-segment sequencer, start/stop button