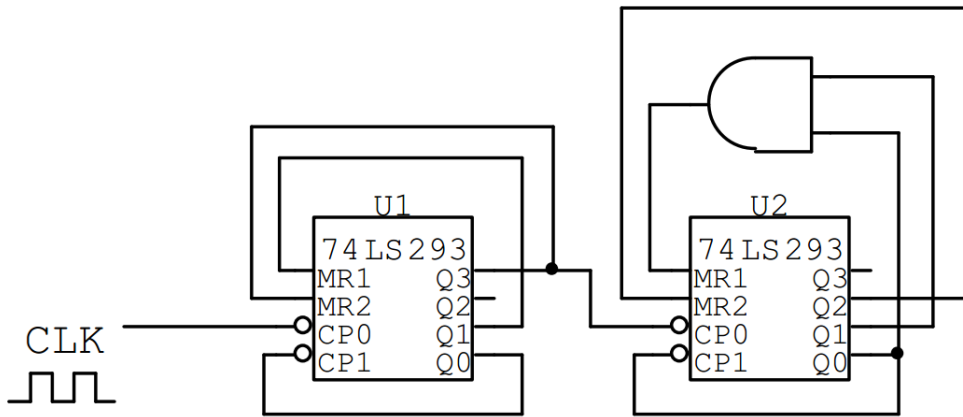


### 0.1 Ex7:



- The frequency of the clock signal is  $f_{CLK} = 35\text{KHz}$ .

1. What is the MOD of the counter ?

- This is MOD-70 counter.

- The circuit consists of 2 IC asynchronous counter.
- The first IC (U1) is MOD-10 counter.
- The second IC (U2) is MOD-7 counter.

2. Determine the frequency of Q3 of U1: - The frequency of Q3:

$$f_{Q3} = \frac{f_{in}}{10} = \frac{35 \times 10^3}{10} = 3500 \text{ (Hz)}$$

3. Determine the frequency of Q2 of U2: - The frequency of Q2:

$$f_{Q2} = \frac{f_{in}}{70} = \frac{35 \times 10^3}{70} = 500 \text{ (Hz)}$$

4. In the Q3, Q2, Q1, Q0 signals of U1 and U2, which signals are glitches ?

- In U1, Q1 and Q3 is glitches.
- In U2, Q2, Q0 and Q1 is glitches.

5. Determine the duty circle of Q2:

$$T_{Q2} = \frac{1}{f_{Q2}} = \frac{1}{500} = 2 \times 10^{-3} \text{ (s)}$$