DELD – Tutorial 4

ECED SVNIT

Instructions For Tutorial Sessions

- Copy questions and work out detailed solutions in a neat and clean handwriting.
- Questions will be shown between 10.40 am to 11.20 am. In the next 10 minutes you need to scan and upload your work in a **PDF format only carrying only your Admission number.**
- Mention all the details viz Full Name, Admission No, Div, Date, Tutorial No. etc on First Page
- **If two handwritings are found similar, they both will be graded 0.**

Question - 1

- Determine the decimal values of the signed binary numbers expressed in 1's complement form:

(a) 00010111 **(b)** 11101000

Question - 2

- Evaluate following expressions using 2's complement arithmetic:

(a) 00001000 − 00000011

(b) 00001100 − 11110111

(c) 11100111 − 00010011

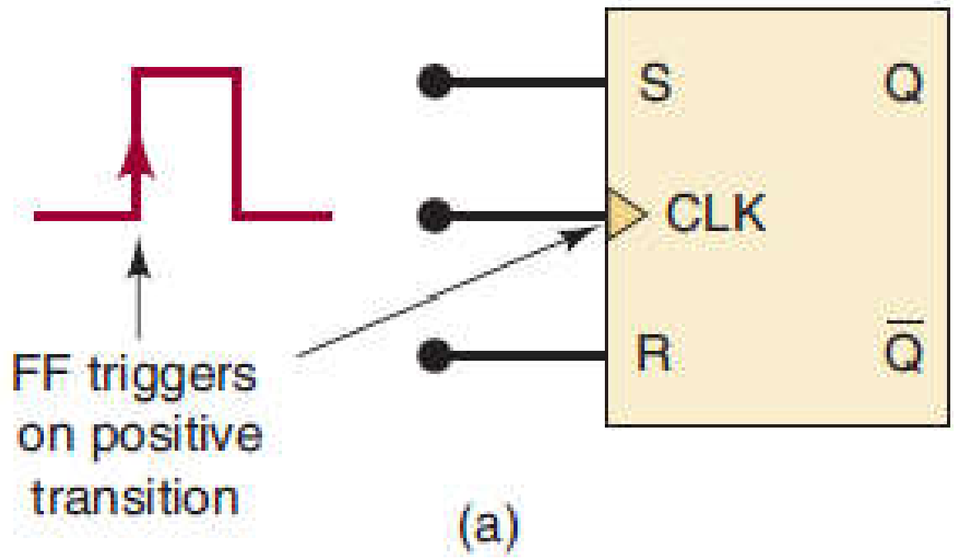
(d) 10001000 − 11100010

Question - 3

- Convert each of the following decimal numbers to their equivalent BCD representation:

(a) 35 **(b)** 98 **(c)** 170 **(d)** 2469

Clocked SR Flip-Flop



(a)

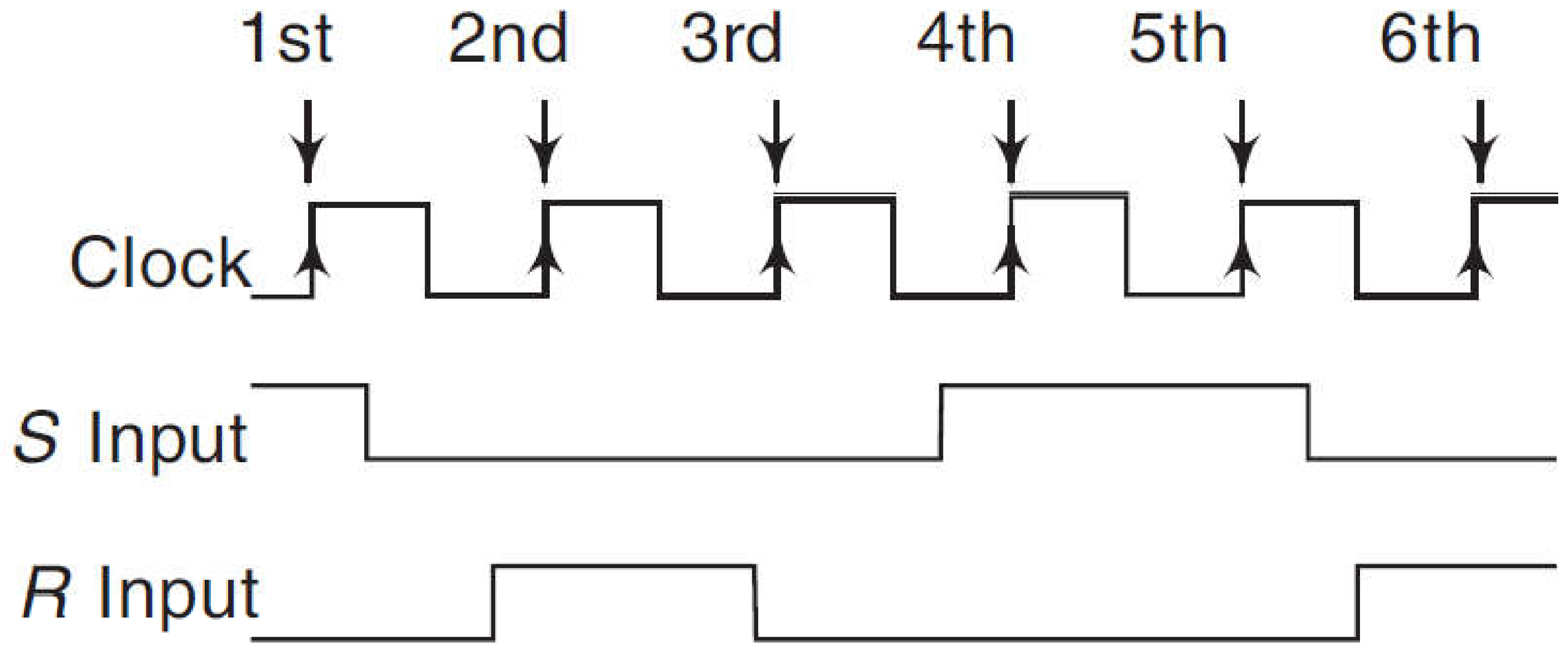
Inputs			Output
S	R	CLK	Q
0	0	↑	Q_0 (no change)
1	0	↑	1
0	1	↑	0
1	1	↑	Ambiguous

Q_0 is output level prior to ↑ of CLK.
↓ of CLK produces no change in Q.

(b)

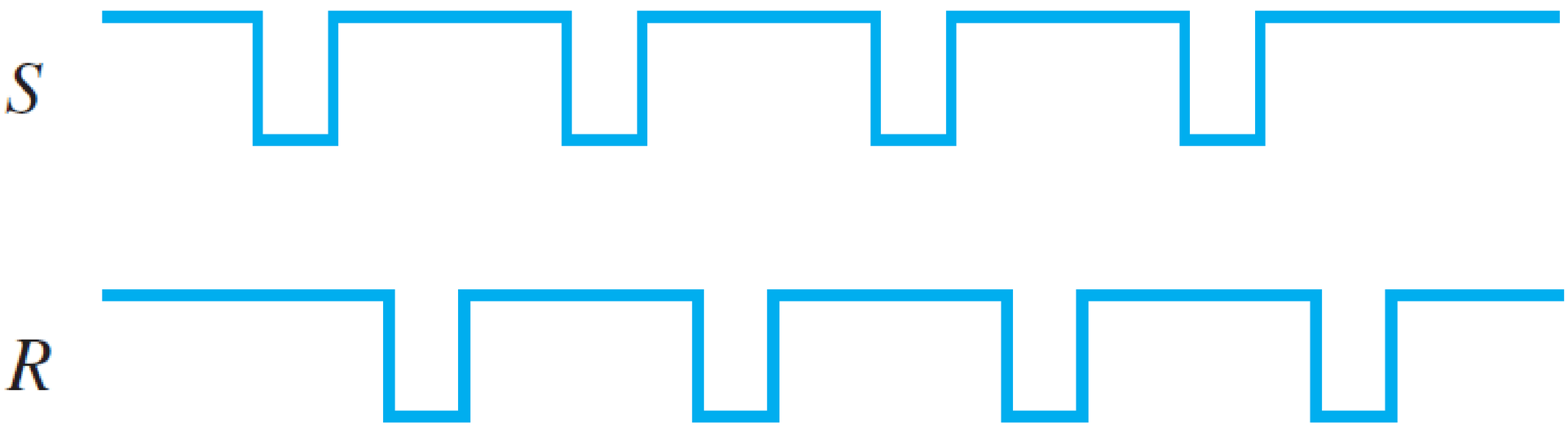
Question - 4

- Assuming Q=0 initially, Predict and draw the output waveform



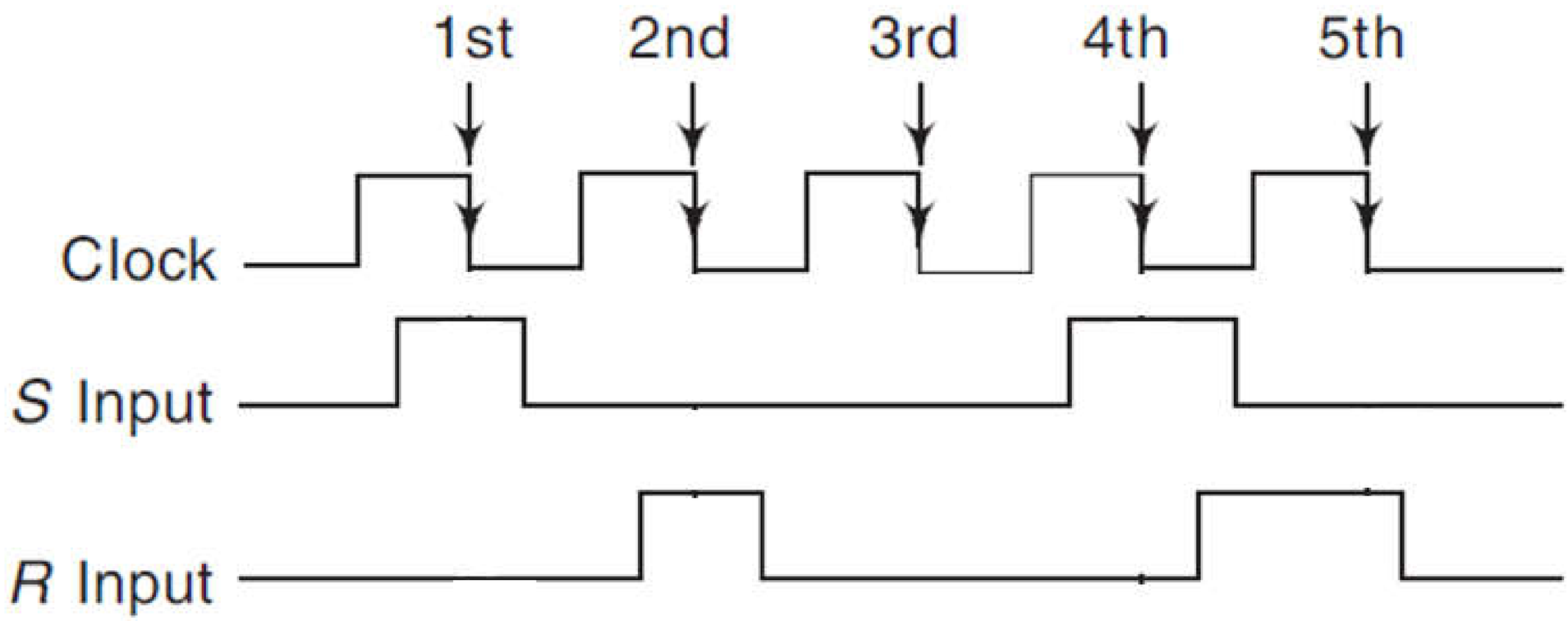
Question - 5

- Assuming Q=0 initially, if the following inputs are applied to an active low SR-Latch, predict and draw the output waveforms.



Question - 6

- Assuming Q=0 initially, Predict and draw the output waveform



To Be Continued...