Lab 7

C. Problems

(1)

ⓐ

S	a	New a(1)	a(2)	a(3)
0	0	1	0	1
0	1	0	1	0
1	0	1	1	1
1	1	1	1	1

ⓑ stable when $S = 1$, new a is always 1.

ⓒ The circuit doesn't remember a bit — it's more like a combinatorial function that breaks on certain inputs.

(2)

ⓐ

D	S	Q	New Q(1)	Q2	Q3
0	0	0	0	0	0
0	0	1	1	1	1
0	1	0	0	0	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	1	1	1
1	1	0	1	1	1
1	1	1	1	1	1

ⓑ • Not stable when $D=0, S=1, Q=1$ and $D=1, S=1, Q=0$
   • Stable everywhere else

Note: Then there are two true's together from the truth table, then the circuit is unstable (oscillating).

∴ Unstable when $\overline{D}\,S Q$, $D S \overline{Q}$

ⓒ The circuit doesn't store a bit — just a function