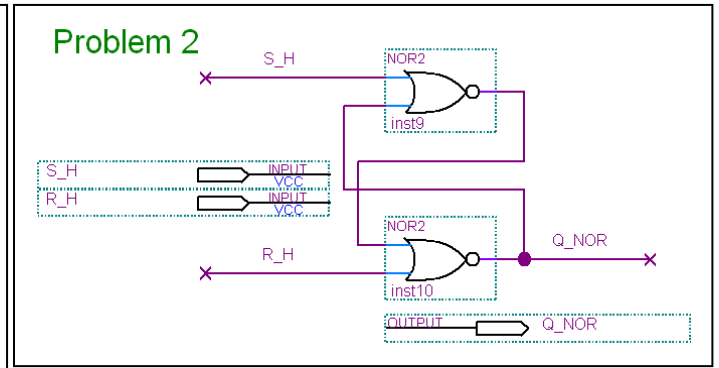
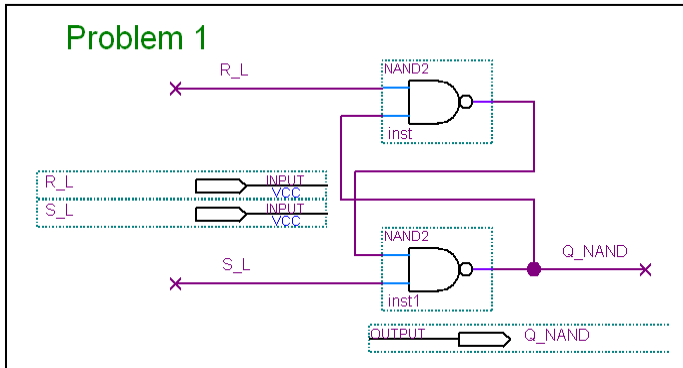
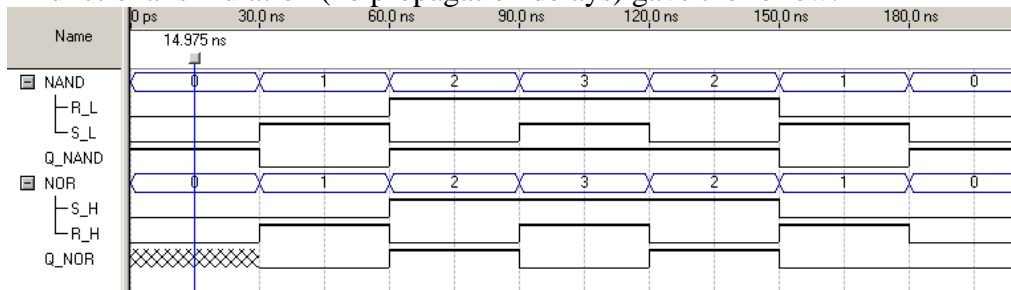


Homework 7 Solutions

Problems 1 & 2



A functional simulation (no propagation delays) gave the follow:



Problem 3

D Flip Flop

D	Q+
0	0
1	1

$Q+ = D$

D-FF Excitation Table

Q	Q+	D
0	0	0
0	1	1
1	0	0
1	1	1

T Flip Flop

T	Q+
0	Q
1	/Q

$Q+ = T*/Q + /T*Q$

T-FF Excitation Table

Q	Q+	T
0	0	0
0	1	1
1	0	1
1	1	0

SR Flip Flop

S	R	Q+
0	0	Q
0	1	0
1	0	1

$Q+ = S + /R*Q$

SR-FF Excitation Table

Q	Q+	S	R
0	0	0	X
0	1	1	0
1	0	0	1
1	1	X	0

JK Flip Flop

J	K	Q+
0	0	Q
0	1	0
1	0	1
1	1	/Q

$Q+ = J*/Q + /K*Q$

JK-FF Excitation Table

Q	Q+	J	K
0	0	0	X
0	1	1	X
1	0	X	1
1	1	X	0

Problem 4

11.1

Solution in back of text (Roth 6th: pg 713; Roth 5th: pg. 646)

11.3

Solution in back of text (Roth 6th: pg 713; Roth 5th: pg. 646)

11.8

Solution in back of text (Roth 6th: pg 714; Roth 5th: pg. 647)

11.9

Solution in back of text (Roth 6th: pg 715; Roth 5th: pg. 648)

Roth 6th: 11.26
Roth 5th : 11.21

