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ECE 218

Homework-10

6.23

PS ABCD	NS abcd	FF inputs				Output Y
		J_0, K_0	J_1, K_1	J_2, K_2	J_3, K_3	
0000	0001	0x	0x	0x	1x	0
0001	0010	0x	0x	1x	x1	1
0010	0011	0x	0x	x0	1x	1
0011	0100	0x	1x	x1	x1	1
0100	0101	0x	x0	0x	1x	1
0101	0110	0x	x0	1x	x1	1
0110	0111	0x	x0	x0	1x	1
0111	1000	1x	x1	x1	x1	1
1000	1001	x0	0x	0x	1x	1
1001	1010	x0	0x	1x	x1	1
1010	1011	x0	0x	x0	1x	1
1011	1100	x0	1x	x1	x1	1
1100	1101	x0	x0	0x	1x	1
1101	1110	x0	x0	0x	x0	0
1110	1111	x0	x0	x1	1x	0
1111	1101	x0	x0	x1	x0	0

CP AB	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	x	x	x	x
10	x	x	x	x

$$J_0 = BCD$$

CP AB	00	01	11	10
00	x	x	x	x
01	x	x	x	x
11	0	0	0	0
10	0	0	0	0

$$K_0 = 0$$

CP AB	00	01	11	10
00	0	0	1	0
01	x	x	x	x
11	x	x	x	x
10	0	0	1	0

$$J_1 = CD$$

CP AB	00	01	11	10
00	x	x	x	x
01	0	0	1	0
11	0	0	0	0
10	x	x	x	x

$$K_1 = A'CD$$

CD \ AB	00	01	11	10
00	0	1	X	X
01	0	1	X	X
11	0	0	X	X
10	0	1	X	X

$$J_2 = AD + B'D$$

CD \ AB	00	01	11	10
00	1	X	X	1
01	1	X	X	1
11	1	X	X	1
10	1	X	X	1

$$J_3 = 0$$

CD \ AB	00	01	11	10
00	0	1	1	1
01	1	1	1	1
11	1	0	0	0
10	1	1	1	1

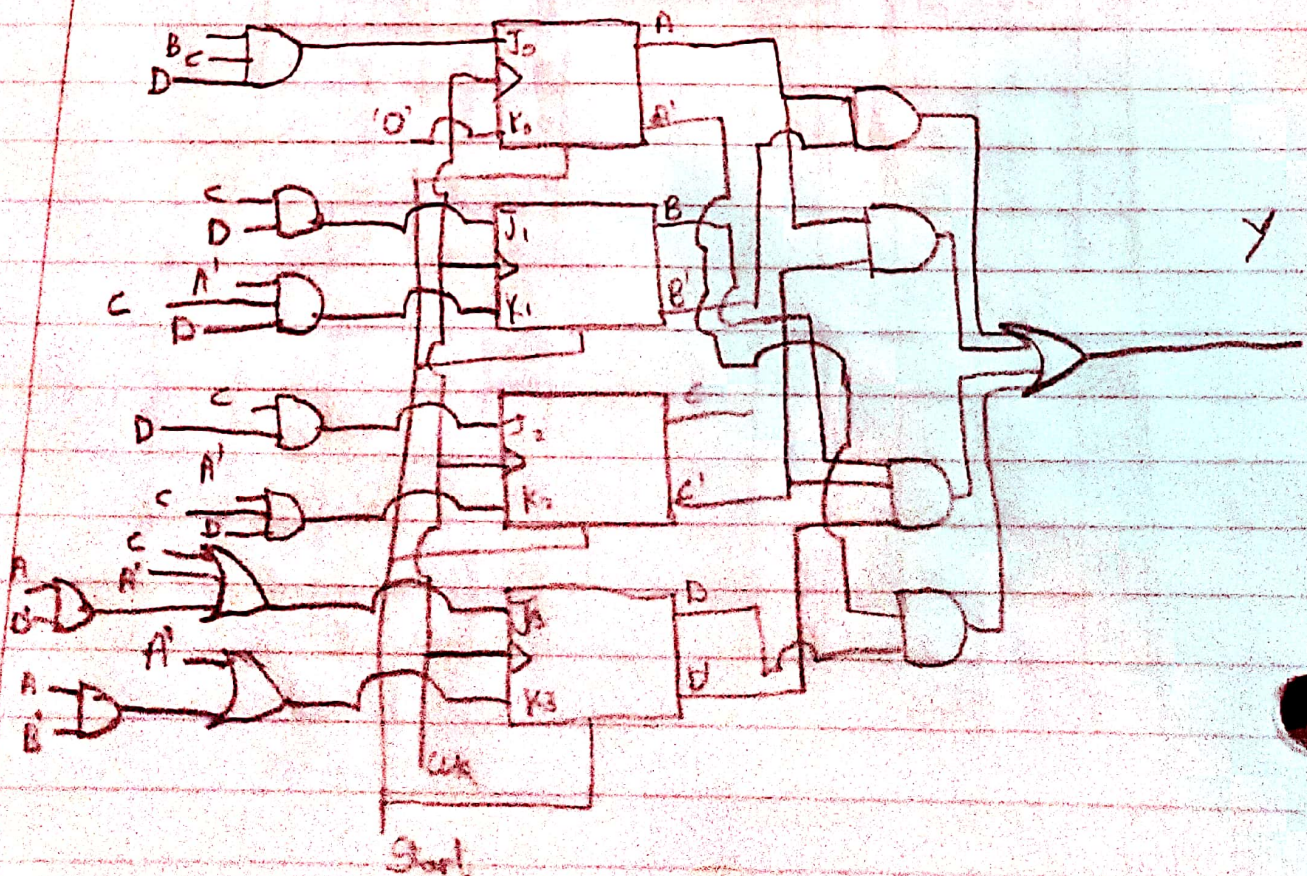
$$Y = BC'D' + AB + AD + AC$$

CD \ AB	00	01	11	10
00	X	X	1	0
01	X	X	1	0
11	X	X	1	1
10	X	X	1	0

$$K_2 = AB + D$$

CD \ AB	00	01	11	10
00	X	1	1	X
01	X	1	1	X
11	X	0	0	X
10	X	1	1	X

$$K_3 = A + B'$$



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State				Next State				Invalid State
A	B	C	E	A	B	C	E	
0	0	0	0	1	0	0	1	9
0	1	0	0	1	0	1	0	10
0	1	0	1	0	0	1	0	2
0	1	1	0	1	0	1	1	11
1	0	0	1	0	1	0	0	4
1	0	1	0	1	1	0	1	13
1	0	1	1	0	1	0	1	5
1	1	0	1	6	1	1	0	6

$$D_c = (A+E)B$$

