CP230 – Problem Set 5

Problem 2.21 [B&V]

Design the simplest sum-of-products circuit that implements the function $f(x_1, x_2, x_3) = \sum m(1, 3, 4, 6, 7)$.

Problem 2.22 [B&V]

Design the simplest product-of-sums circuit that implements the function $f(x_1, x_2, x_3) = \Pi M(0, 2, 5)$.

Problem 2.31 [H&H]

Exercise 2.31 Find a minimal Boolean equation for the function in Figure 2.86. Remember to take advantage of the don't care entries.

A	B	C	D	Y
0	0	0	0	0
0	0	0	1	1
0	0	1	0	X
0	0	1	1	X
0	1	0	0	0
0	1	0	1	X
0	1	1	0	X
0	1	1	1	X
1	0	0	0	1
1	0	0	1	0
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	X
1	1	1	1	1

Figure 2.86 Truth table for Exercise 2.31

Problem 2.39 [H&H]

Exercise 2.39 Write a minimized Boolean equation for the function performed by the circuit in Figure 2.87.

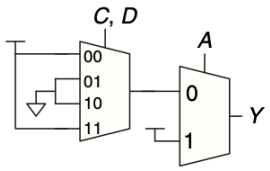

Figure 2.87 Multiplexer circuit

Problem 2.40 [H&H]

Exercise 2.40 Write a minimized Boolean equation for the function performed by the circuit in Figure 2.88.

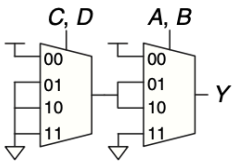

Figure 2.88 Multiplexer circuit