

CDA 3101 – Fall 2013 – Quiz #1 – Solution

CDA3101 – F13 – Quiz #1

Fri 06 Sept 2013

Given: Logic Eqn. $z = w \text{ NOR } (x \text{ XOR } y) \text{ AND } x$

Step 1. Draw truth table for above equation. (5 pts)

Step 2. Produce logic equation from truth table, in sum-of-products (SOP) form. (6 pts)

Step 3. Use SOP logic equation to draw corresponding SOP circuit diagram (9 pts)
 → DO NOT MINIMIZE ←

XOR Truth Table:

		y	
		0	1
x	0	0	1
	1	1	0

20 pts total – You have 20 minutes to complete

Also, the AND operator is evaluated first as it has higher precedence over the NOR operator

Quiz 1 Solution

(1) Truth table

$$z = w \text{ NOR } (x \text{ XOR } y) \text{ AND } x$$

w	x	y	t = x XOR y	u = t AND x	z = w NOR u
0	0	0	0	0	1
0	0	1	1	0	1
0	1	0	1	1	0
0	1	1	0	0	1
1	0	0	0	0	0
1	0	1	1	0	0
1	1	0	1	1	0
1	1	1	0	0	0

(2)

$$w' x' y' + w' x' y + w' x y$$

(3)

