Spring 2008
TESTING OF
ULTRA LARGE SCALE INTEGRATED CIRCUITS
16:332:576
Homework 5
Assigned Feb. 22, 2008 – Due March 7, 2008

Reading Assignment: Chapter 7

1 Combinational Automatic Test Pattern Generation

7.27 *Static compaction.* Statically compact the following test patterns first in forward order, and then in reverse order. Which compaction order is superior?

t_1	1	0	X	X	X
t_2	0	X	1	X	X
t_3	X	0	1	0	1
t_4	X	1	1	X	0
t_5	X	X	X	0	X

7.28 *PODEM.* Perform ATPG for the fault l sa1 in the circuit of Figure 1 using SCOAP measures and PODEM.

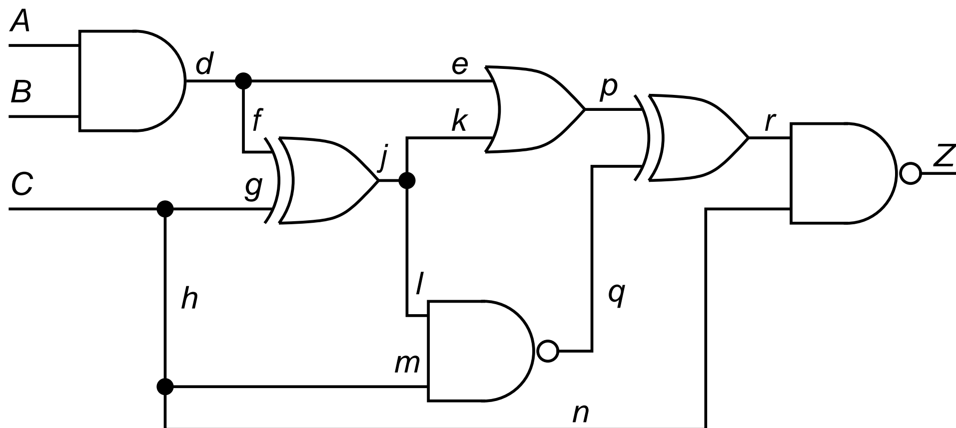

Figure 1: Circuit for Problems 7.28, 7.29, and 7.30.

7.29 *FAN.* Perform ATPG for the fault k sa1 in the circuit of Figure 1 using SCOAP measures and FAN. Use the knowledge from this ATPG (if possible) to simplify the circuit as much as possible.

7.30 *SOCRATES.* Perform ATPG for the fault q sa0 in the circuit of Figure 1 using SCOAP measures and SOCRATES. Make sure that you also do the static and dynamic learning.