LABORATORY EXERCISES
Atalanta - Hope

1) You are prompted to output a test set for the c880o.bench circuit with the following properties: Output 5 test vectors for each fault but the undefined inputs remain as is. In addition, find the response of the circuit for each fault in each of the above 5 cases.

2) You are prompted to export a test set for the s9234.bench circuit with the following properties: Include Random Pattern Testing before the deterministic export of test vectors, which will stop when 48 consecutive packets of the 32 random vectors do not detect any errors.

3) You are prompted to export a test set for the s9234.bench file with the following properties: Export 2 test vectors for each error, the number of maximum backtracks for the FAN algorithm equal to 4, and the list of faults that are not detected or rejected is returned to a file named s9234.ufaults. How many test vectors have you calculated? How many faults have been returned to the list in the output file? How many redundant errors did the program find?

4) How would you declare the following faults in a circuit fault list?

   a. Stuck-at/1 fault at the output of gate sw3 connected to the input of gate gt1
   b. Stuck-at/0 fault at the input of gate sb2 connected to the output of gate gt2
   c. Stuck-at/1 fault at the output of gate f8
   d. Stuck-at/0 fault at the output of gate gh6 connected to the input of gate gt1

5) You are prompted to simulate the c1355o.bench circuit and return the list of faults detected, in an output file. What do you notice happening in the latest test vectors that have been used in the simulation? How many bugs do they detect? Why is this happening?

6) You are prompted to emulate the circuit c1355o.bench as in the previous case, but by adding the -N parameter to the command line. What changes now in the simulation? What results do you expect? Does running the simulation return the results you predicted? Why is there a difference between this emulation and that of the previous question (if any)?

7) Describe the following circuit in the way you are given in the atalanta and hope manuals and find test vectors for it.

You are given a circuit of 5 inputs A, B, C, D, E, and an output F. A and B are inputs of an AND gate. So are the inputs C and D of a second AND gate. The outputs of the above two gates are the two inputs of an OR gate. The output of the OR gate and the E input are the inputs of a third AND gate from where we get the primary output F of the circuit.

How many test vectors are produced for the specific circuit and what is the response in each case?