Birzeit University logo

Faculty of Engineering and Technology

Electrical and Computer Engineering Department

Advanced Digital Design ENCS3310

Homework#1

The following circuit shows a 4-bit Johnson Counter (Switch – Tail Ring Counter). Our aim is to build a generic n-bit Johnson counter behaviorally and structurally.

1. Write Verilog description for a generic (n-bit) Johnson counter behaviorally.
2. Write Verilog description for D-FF.
3. Use the D-FF in Part “b” to build n-bit Johnson counter structually.
4. Write testbench to test part a and part c for n=4. Correct output will give results as shown in State Diagram (or State Table) below.

