



**Department of Electrical and Computer Engineering
Utah State University**

**ECE 5930/6930: VLSI Testing and Verification
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**Homework 04
Solution Outline**

Answer 1.

The SCOAP values are shown in the Figure 1:

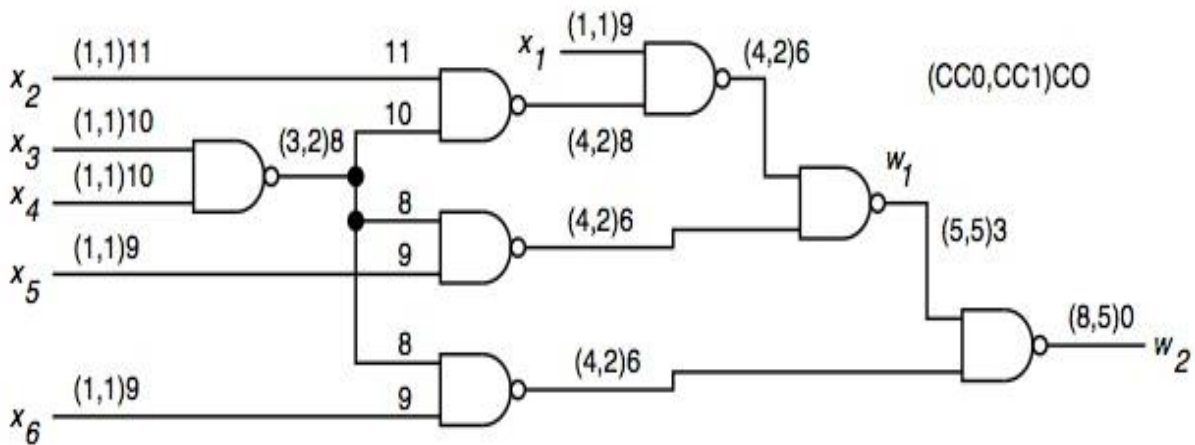


Figure 1: Combinational SCOAP Measures

Answer 2.

The SCOAP values are shown in the Figure 2:

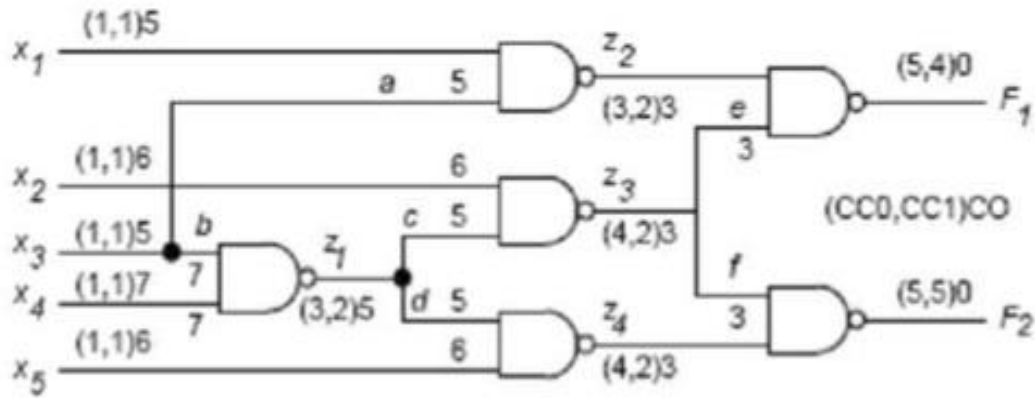


Figure 2: Combinational SCOAP Measures

Answer 3.

The steps of calculation for SCOAP testability measures are shown in the three figures that follow. Combinational measures are shown as $(CC0, CC1) CO$ and sequential measures as $(SC0, SC1) S0$.

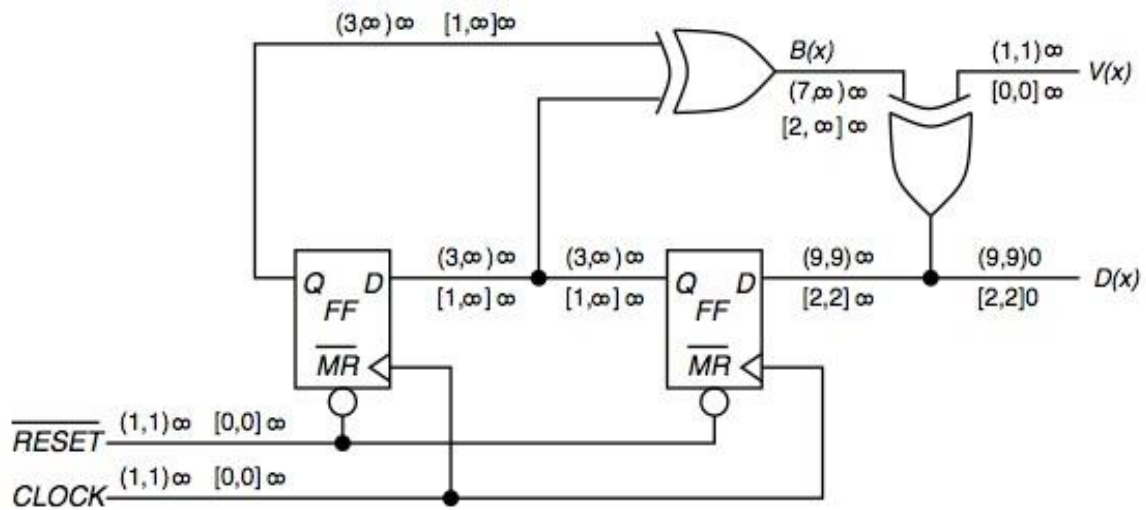


Figure 3: Initialization and First Controllability Pass

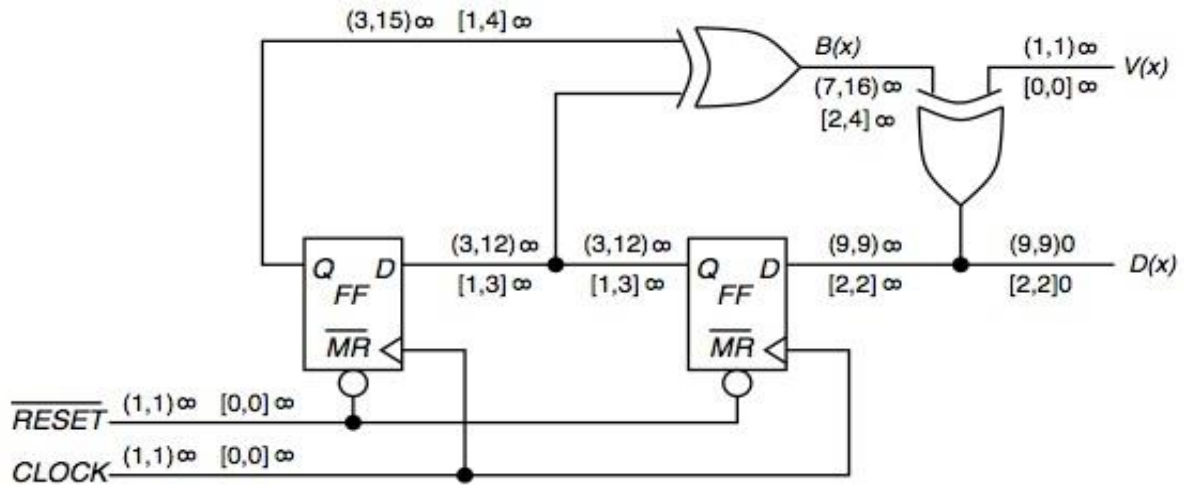


Figure 4: Converged Controllability Values

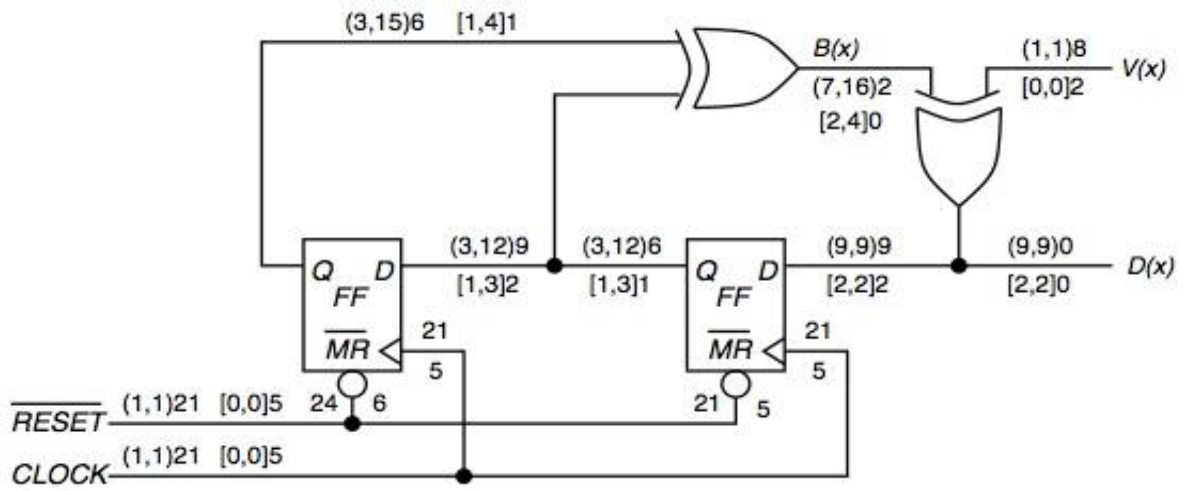


Figure 5: All Controllability and Observability Values