CND 221: Advanced Full Custom VLSI Design

MidTerm Exam

Section #: 19

Submitted by:

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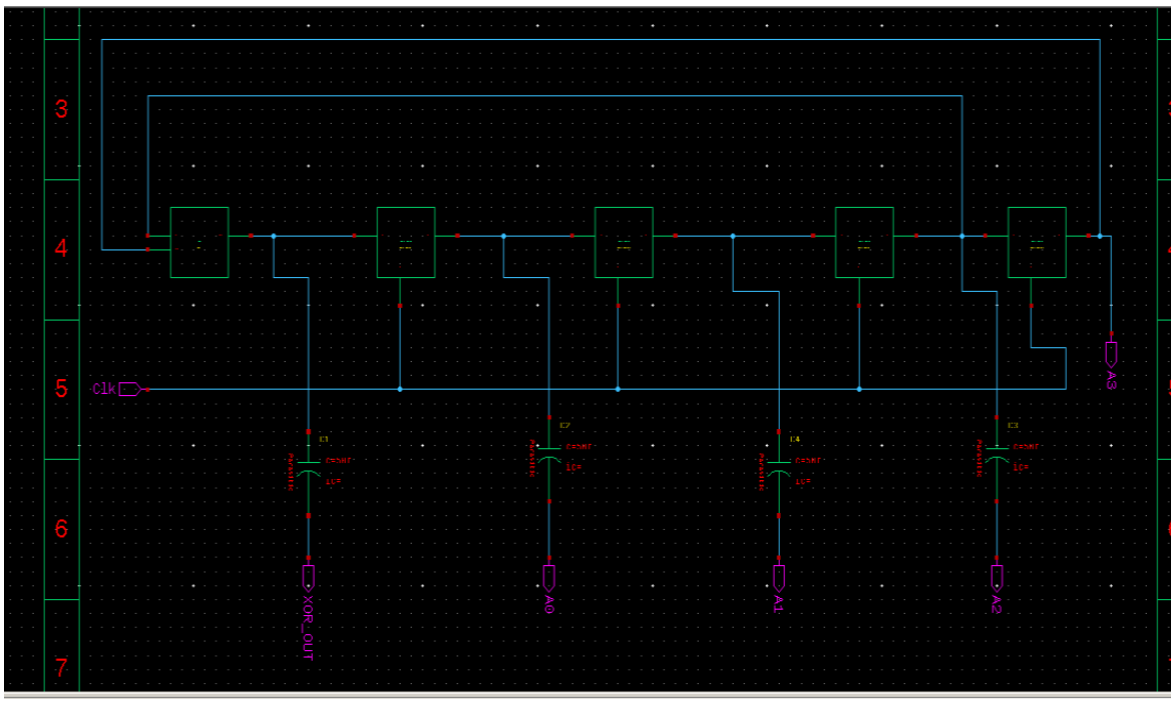
Pseudo-random number generator

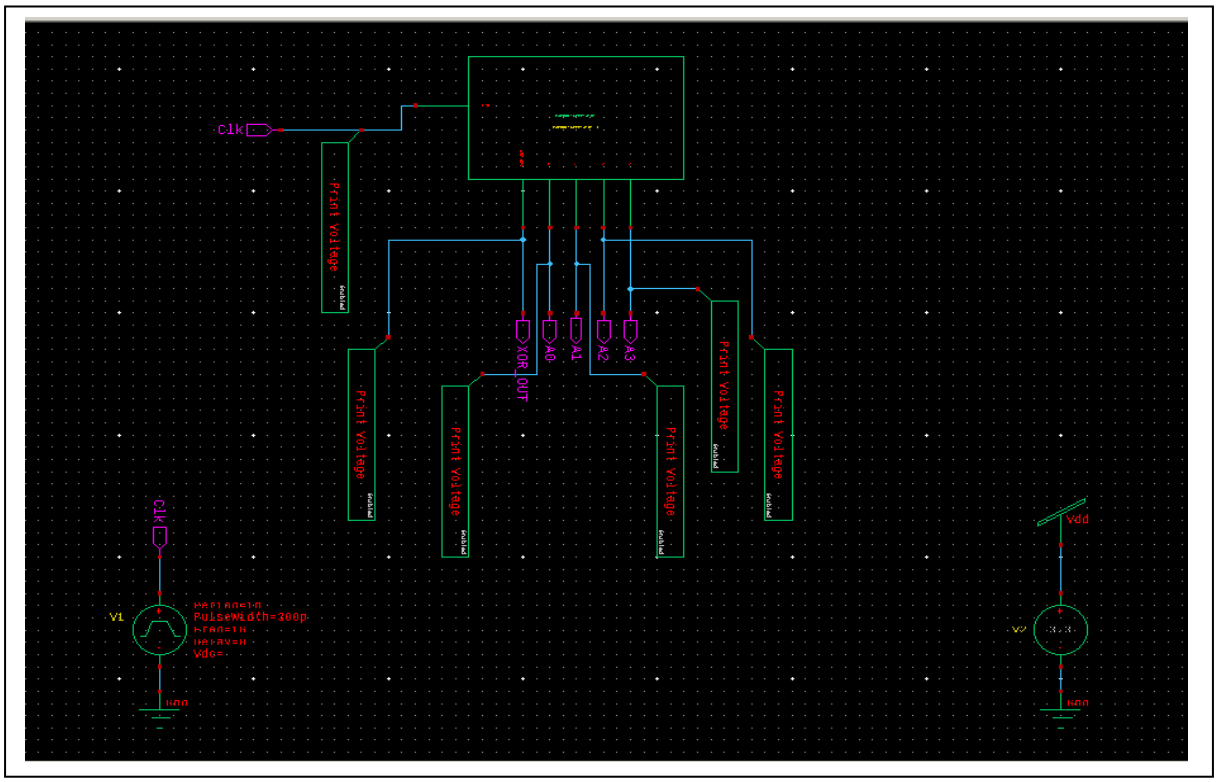
i. Add 1 paragraph describes your design and elements that you used:

A pseudorandom generator constructed with one XOR gate and four D-flip flops operates by taking the outputs of the third and fourth flip flops as inputs to the XOR gate. Each D-flip flop stores a bit of information, and their outputs feed into the XOR gate, which then produces a pseudorandom output based on the XOR operation between the two inputs. As the flip flops cycle through their states, the XOR gate generates a sequence of bits that exhibit pseudorandom behavior, suitable for various applications like cryptography or simulations

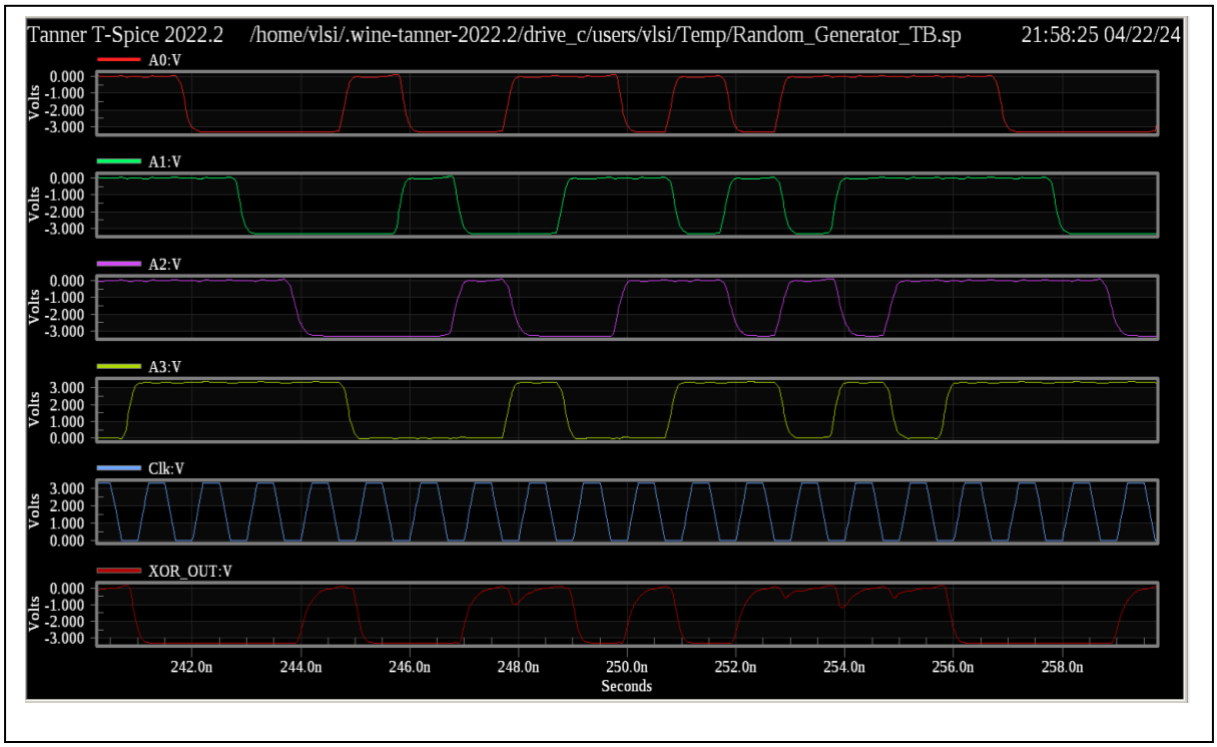
ii. Add a screenshot from your **schematic:**



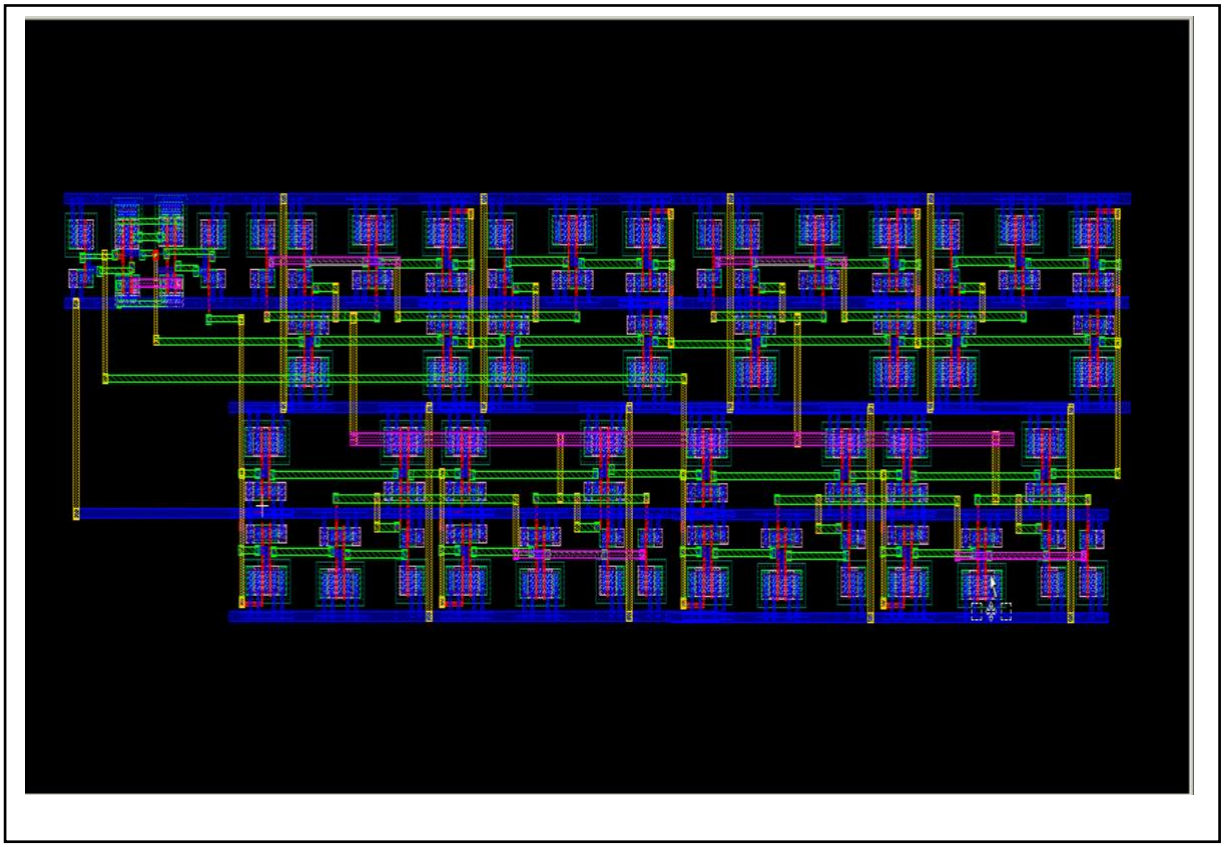
iii. Add a screenshot for your Testbench



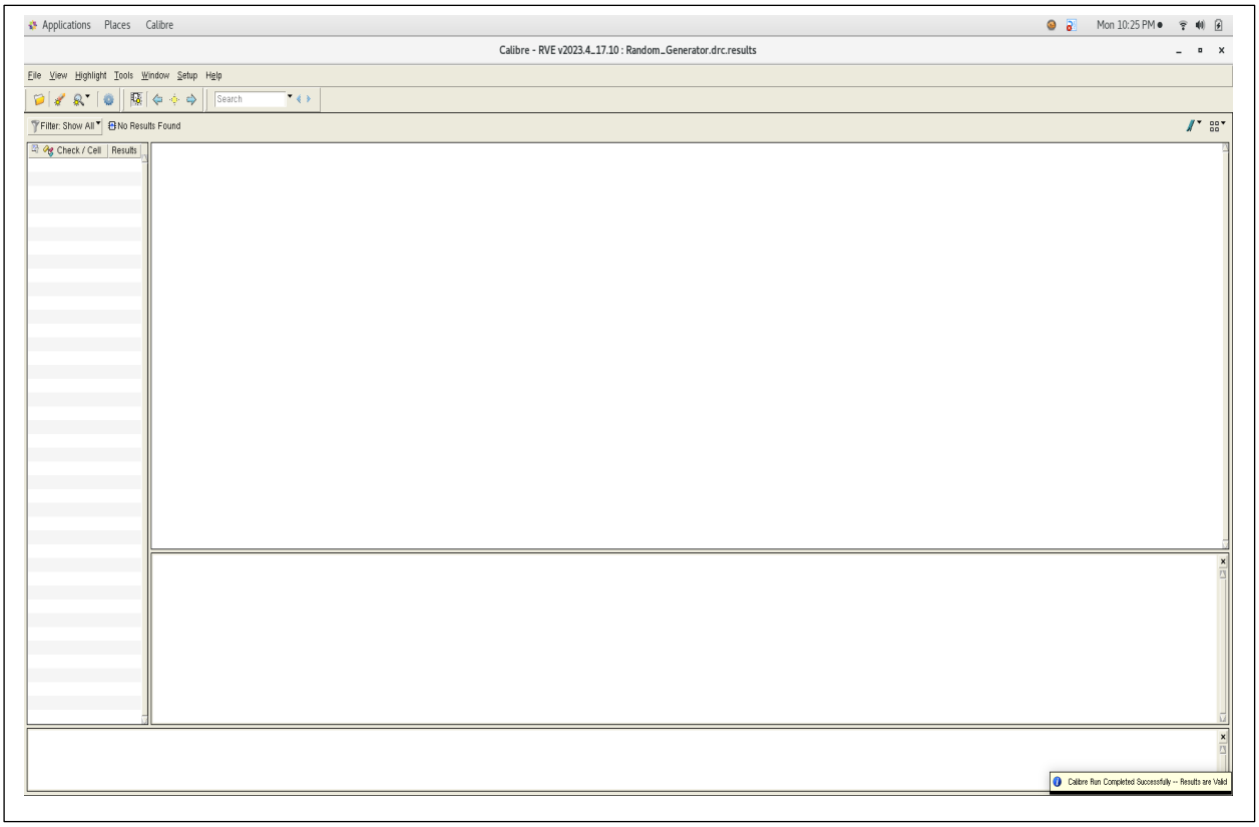
iv. Add a screenshot from your waveform viewer for the CLK, A[3:0], and Output of the XOR gate. **(Note Zoom In to show at least 6 CLK cycles).**



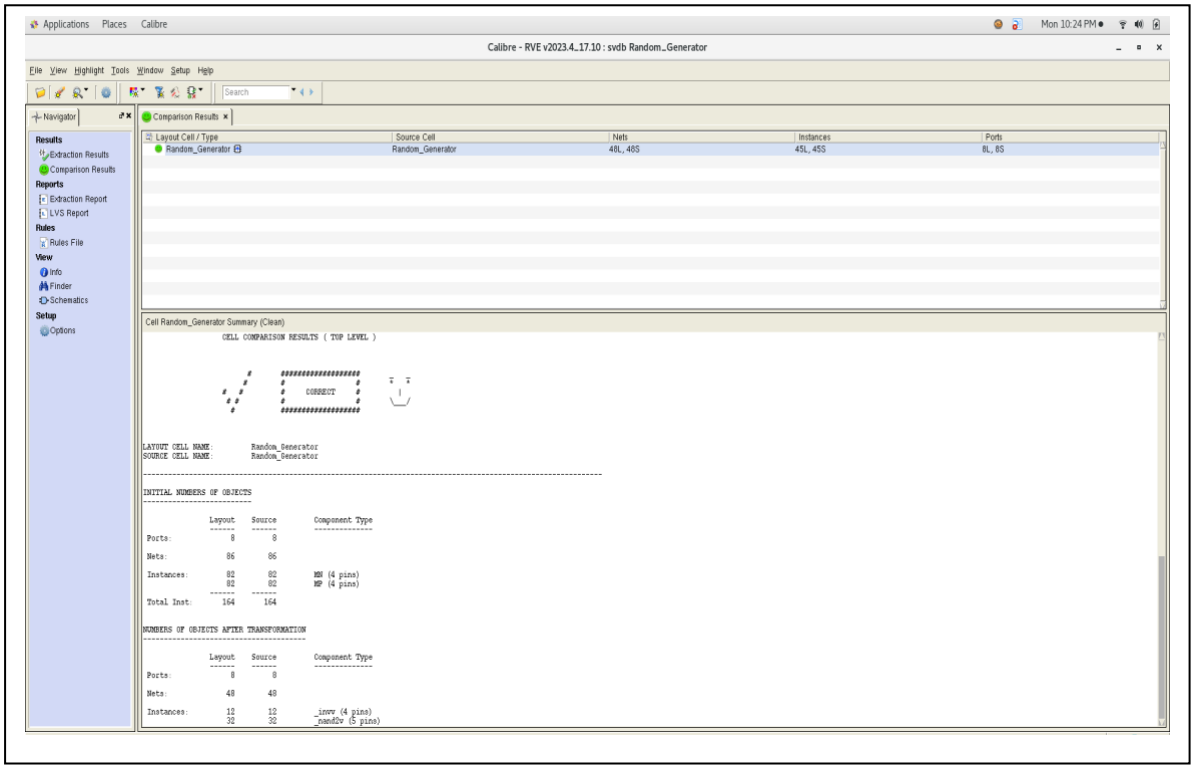
v. Add a screenshot from your **Layout**



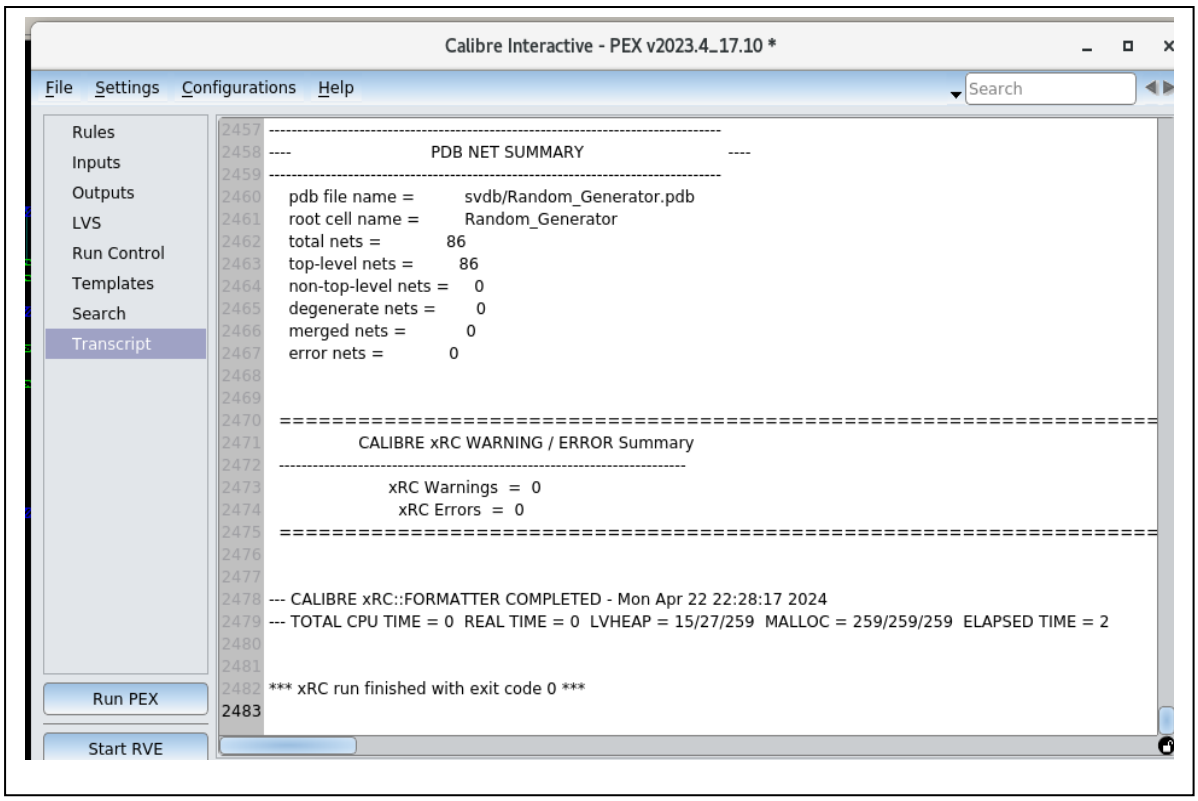
vi. Add a screenshot of the DRC report?



vii. Add a screenshot of the LVS report?



viii. Add a screenshot for PEX.



ix. Add a screenshot to the waveform viewer for post layout simulation.