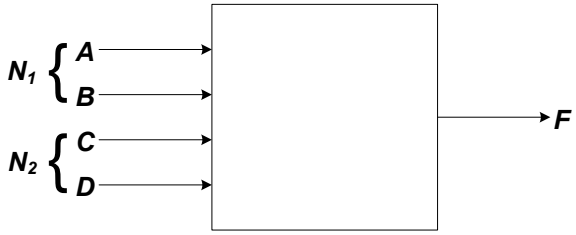
Assignment for Appendix

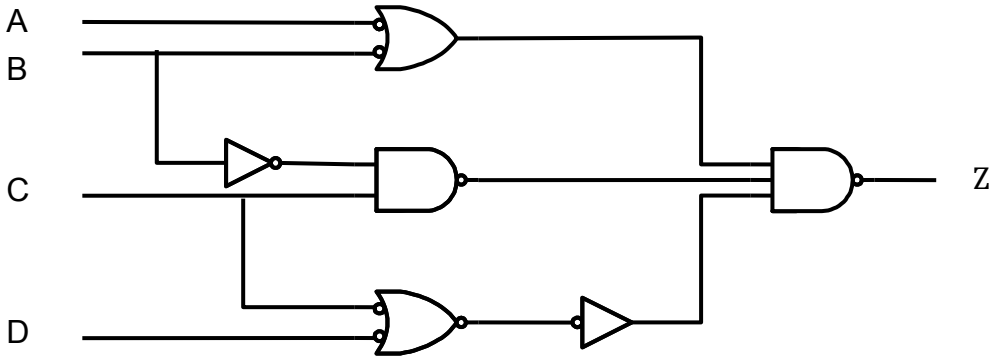
1. A switching circuit has four inputs as shown. A and B represent the first(MSB) and second(LSB) bits of a binary number N_1, respectively. C and D represent the first(MSB) and second(LSB) bits of a binary number N_2, respectively. The output is to be 1 only if the product N_1 x N_2 is less than or equal to 2.

(a) Write the truth table for the system.

(b) Write the canonical SOP and POS expressions for F.



2. Develop a Verilog module to describe the following circuit.



3. Show how you would realize the logic function $Z = \bar{A}\bar{B}C\bar{D}$ using only 2-input NAND gates. Draw a circuit diagram to show your implementation.