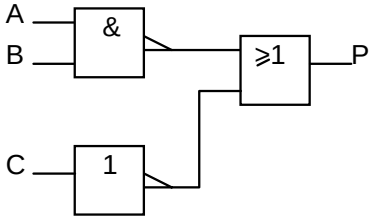
Digital Electronics

Tutorial Sheet 6

1.** Show that the following circuit is equivalent to a single gate.

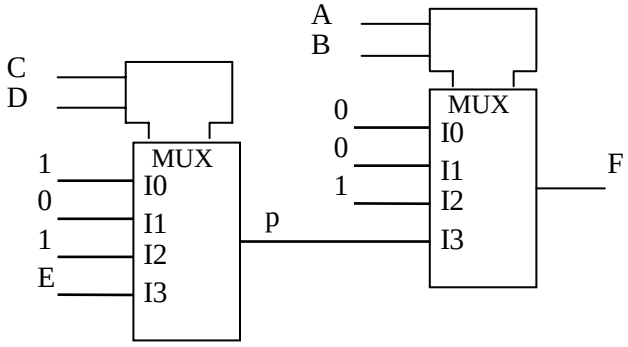


2.* Give two ways of showing inversion at the output of gates.

3.** Given a two input multiplexer, write down its truth table and hence use it to implement a) an AND gate and b) an OR gate.

4.*** For a multiplexer with control inputs A and B, derive the required data inputs to implement (i) the carry function of a full adder (ii) $f = (A + B)(\overline{A} + \overline{C})$.

5.*** What is the logic function of the MUX circuit below?



6.** Redesign the parity generator and checker circuit given in the Lecture to operate using odd parity.

7.** Determine the input conditions needed to produce x= 1 for the circuit below.