Study Questions (Chapter 02 – Part 4)

1. In a 5-input **AND** gate, when will the output be one?

2. In a 5- input **OR** gate, when will the output be one?

3. In a 5- input **XOR** gate, when will the output be one?

4. In a 5- input **NAND** gate, when will the output be one?

5. In a 5- input **NOR** gate, when will the output be one?

6. What is the Boolean expression that describes the sum in a single-bit full adder?

7. What is the Boolean expression that describes the carry in a single-bit full adder?

8. Draw the block diagram of an N-bit ripple-through adder/subtractor.

9. What is the definition of the decoder circuit?

10. What is the definition of the Multiplexer circuit?

11. Draw a truth table of the two circuits below.