

## Study Questions (Chapter 02 – Part 4)

1. In a 5-bit **AND** gate, when the output will be one?
2. In a 5-bit **OR** gate, when the output will be one?
3. In a 5-bit **XOR** gate, when the output will be one?
4. In a 5-bit **NAND** gate, when the output will be one?
5. In a 5-bit **NOR** gate, when the output will 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.

