# Logic Gate Summative Quiz <span style="color:red">Answer Key</span>

1. _____**A**___ Buffer Gates: Green Input → _____ Output

A) Green                          B) Red                              C) None of these are correct.

2. _____**B**_____ NOT Gates: Green Input --> _____ Output

A) Green                          B) Red                              C) None of these are correct.

3. _____**A**_____ OR Gates: Red + Green Inputs --> _____ Output

A) Green                          B) Red                              C) None of these are correct.

4. _____**A**_____ OR Gates: Green + Green Inputs --> _____ Output

A) Green                          B) Red                              C) None of these are correct.

5. _____**B**_____ AND Gates: Red + Green Inputs --> _____ Output

A) Green                                        C) None of these are correct.

B) Red                                          D) Both A&B are correct.

6. _____**B**_____ AND Gates: Red + Red Inputs --> _____ Output

A) Green                                        C) None of these are correct.

B) Red                                          D) Both A&B are correct.

7. _____**B**_____ NOR Gates: Green + Red Inputs --> _____ Output

A) Green                                        C) None of these are correct.

B) Red                                          D) Both A&B are correct.

8. _____**A**_____ NOR Gates: Red + Red Inputs --> _____ Output

A) Green                                        C) None of these are correct.

B) Red                                          D) Both A&B are correct.

9. _____**A**_____ NAND Gates: Green + Red Inputs --> _____ Output

A) Green                                        C) None of these are correct.

B) Red                                          D) Both A&B are correct.

10. _____**B**_____ NAND Gates: Green + Green Inputs --> _____ Output

A) Green                                        C) None of these are correct.

B) Red                                          D) Both A&B are correct.

11. _____**B**_____ XOR Gates: Green + Green Inputs --> _____ Output

A) Green                                        B) Red

C) None of these are correct.                          D) Both A&B are correct.

12. _____**B**_____ XOR Gates: Red + Red Inputs --> _____ Output

A) Green                                               C) None of these are correct.
B) Red                                                 D) Both A&B are correct.

13. _____**D & E**_____ Two inputs, a green and a red, need to result in a red output. What gates can be used to accomplish this? List ALL correct answers.

A) Buffer                    D) AND                    G) XOR
B) NOT                       E) NOR                    H) None of these are correct.
C) OR                        F) NAND

14. _____**C & D**_____ Currently two inputs are both red and they enter into an AND gate. What changes can be made to invert its output? List ALL correct answers.

A) Change the AND gate to an OR gate.                  D) Change the AND gate to a NOR gate.
B) Change the AND gate to a XOR gate.                  E) None of these are correct.
C) Change the AND gate to a NAND gate.

15. _____**A**_____ Currently two unknown inputs enter into an OR gate. The output is green. The gate is changed into a XOR gate and the output changes to red. What are the possible inputs? List ALL correct answers.

A) Green + Green            C) Green + Red            E) None of these are correct.
B) Red + Red               D) Red + Green

16. _____**B, C & D**_____ Currently two unknown inputs enter into a NOR gate. The output is red. The gate is changed into an AND gate and the output stays red. What are the possible inputs? List ALL correct answers.

A) Green + Green            C) Green + Red            E) None of these are correct.
B) Red + Red               D) Red + Green

17. _____**C**_____ Currently two unknown inputs enter an unknown gate. The output is green.

Putting a NOT gate on just the first input changes the final output to red.
Putting a NOT gate on just the second input does not change the final output, it remains green.
Putting a NOT gate on BOTH inputs does not change the final output, it stays green.

What is the unknown gate and the unknown inputs? There is only one correct answer.

A) NOR Gate, 1st Input = Green, 2nd Input = Red        D) NAND Gate, 1st Input = Red, 2nd Input = Red
B) AND Gate, 1st Input = Green, 2nd Input = Green      E) XOR Gate, 1st Input = Red, 2nd Input = Green
C) OR Gate, 1st Input = Green, 2nd Input = Red         F) None of these are correct.