

NAND and Boolean Algebra Questions

Question 1

The output from a 2 input NAND gate is Logic 1 when:

- A. Only when both inputs are Logic 1
- B. Only when both inputs are Logic 0
- C. Either input is logic 1
- D. Either input is logic 0

Question 2

To use a 2 input NAND gate as a NOT gate:

- A. Connect the two inputs together
- B. Use one input and leave the other disconnected
- C. Use one input and connect the other input to ground (0V)
- D. Connect the input to the output

Question 3

A 2 input OR gate can be made from:

- A. 1 NAND gate
- B. 2 NAND gates
- C. 3 NAND gates
- D. 4 NAND gates

Question 4

An AND gate can be made by:

- A. A NOT gate followed by a NAND gate
- B. A NAND gate followed by a NOT gate
- C. An OR gate with the inputs inverted
- D. A NOR gate with the inputs connected together

Question 5

Replacing all the different logic gates in a circuit with their NAND equivalent circuits is a good idea because:

- A. NAND gates are much cheaper than the other logic gates
- B. NAND gates are much faster than the other logic gates
- C. It might be possible to build the circuit using fewer logic gates overall
- D. It makes the circuit diagram easier to understand

Question 6

In Boolean algebra, the AND function is represented by a:

- A. plus
- B. dot
- C. comma
- D. bar

Question 7

In Boolean algebra, the NOT function is represented by a:

- A. plus
- B. dot
- C. comma
- D. bar

Question 8

$Q = A.(B+C)$ means:

- A. $Q=1$ when A is 1 and either B or C are 1
- B. $Q=1$ when A is 0 and either B or C are 0
- C. $Q=1$ when A is 1 and B and C are both 0
- D. $Q=1$ when A, B and C are all 0

Question 9

$Q=1$ when either A and B are both 1 or B and C are both 1 is written as:

- A. $Q = A+B+C$
- B. $Q = A.(B+C)$
- C. $Q = B$
- D. $Q = (A.B)+(B.C)$

Question 10

Boolean algebra can be used to:

- A. Only describe logic circuits
- B. Only describe truth tables
- C. Only simplify logic expressions
- D. Do all of the above

Answers

1. D
2. A
3. C
4. B
5. C
6. B
7. D
8. A
9. D
10. D

Website

http://www.pfnicholls.com/Electronics_Resources/QuestionIndex.html

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