**01. The digital circuitry in digital computers and other digital systems is designed, and its behavior is analyzed, with the use of a mathematical discipline known as \_\_\_\_\_\_\_\_\_\_.**

Boolean algebra

**02. The basic logical operations of Boolean algebra are AND, OR, and \_\_\_\_\_\_\_\_.**

NOT

**03. The fundamental building block of all digital logic circuits is the \_\_\_\_\_\_\_.**

gate

**04. Each gate is defined in three ways: graphic symbol, algebraic notation, and \_\_\_\_\_\_\_\_\_\_.**

truth table

**05. To \_\_\_\_\_\_\_\_ a signal is to cause a signal line to make a transition from its logically false (0) state to its logically true (1) state.**

assert

**06. A \_\_\_\_\_\_\_\_ is an interconnected set of gates whose output at any time is a function only of the input at that time.**

combinational circuit

**07. A combinational circuit can be defined by Boolean equations, truth table, and \_\_\_\_\_\_\_\_\_.**

graphical symbols

**08. Consisting of an array of 2” squares representing all possible combinations of values of *n* binary variables, the \_\_\_\_\_\_\_\_\_ is a convenient way of representing a Boolean function of a small number (up to four) of variables.**

Karnaugh map

**09. The \_\_\_\_\_\_\_\_\_ connects multiple inputs to a single output.**

multiplexer

**10. A \_\_\_\_\_\_\_\_\_ is a combinational circuit with a number of output lines, only one of which is asserted at any time.**

decoder

**11. The simplest form of sequential circuit is the \_\_\_\_\_\_\_\_\_.**

flip-flop

**12. A \_\_\_\_\_\_\_\_ is a register whose value is easily incremented by 1 modulo the capacity of the register.**

counter

**13. An asynchronous counter is also referred to as a \_\_\_\_\_\_\_\_ because the change that occurs to increment the counter starts at one end and “ripples” through to the other end.**

ripple counter

**14. A \_\_\_\_\_\_\_\_\_ is a relatively small PLD that contains two levels of logic, an AND-plane and an OR-plane, where both levels are programmable.**

programmable logic array (PLA)

**15. Also referred to as a field-programmable device (FPD), a \_\_\_\_\_\_\_\_\_\_ refers to any type of integrated circuit used for implementing digital hardware, where the chip can be configured by the end user to realize different designs.**

programmable logic device (PLD)