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

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

**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 Kanaugh map is a convenient way of representing a Boolean function of a small number (up to four) of variables.**

**09. The multiplexer connects multiple inputs to a single output.**

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

**11. The simplest form of sequential circuit is the flip-flop**

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

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

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

**15. Also referred to as a field-programmable device (FPD), a PLD 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.**