

KNOWLEDGE PROBE 1: PROGRAMMABLE LOGIC DEVICES

Ways to Implement Digital Logic

Learning Objectives

1. Identify the three basic methods of implementing digital logic circuits.
 2. Distinguish between the different types of PLDs.
 3. Identify advantages and disadvantages of the different types of PLDs.
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1. TTL and CMOS logic ICs are still widely used to build computers.
 - a. True
 - b. False
 2. Basic logic functions like AND, OR and NOT can be implemented in an embedded microcontroller.
 - a. True
 - b. False
 3. Virtually all electronic products contain a microcontroller.
 - a. True
 - b. False
 4. An IC custom designed for a specific function is referred to as a (n)
 - a. ASIC
 - b. Embedded controller
 - c. Functional IC
 - d. PLD
 5. PLDs can implement linear analog circuits.
 - a. True
 - b. False
 6. Which of the following is NOT a type of FPD?
 - a. CPLD
 - b. FPGA
 - c. SPLD
 - d. Standard cells
 7. The high cost of an ASIC is justified when
 - a. High volume is assured
 - b. Highest speed is needed
 - c. Lowest cost is desired
 - d. Lowest power consumption is desired



8. Unique circuits are created in gate arrays and standard cells by
 - a. Computer programming links
 - b. Designing special wiring masks
 - c. Designing from scratch
 - d. Enabling or disabling internal links
9. Which of the following is NOT an SPLD?
 - a. CPLD
 - b. GAL
 - c. PAL
 - d. PROM
10. A microcontroller can be built using a PLD.
 - a. True
 - b. False
11. Which of the following is NOT an advantage of a PLD over standard TTL/CMOS logic?
 - a. Easier to redesign
 - b. High speed
 - c. Higher power consumption
 - d. Less space
12. What is a core as it appears in some SoC?
 - a. Embedded microcontroller
 - b. FPGA
 - c. Memory
 - d. SPLD