

KNOWLEDGE PROBE 3: MICRO & EMBEDDED CONTROLLERS

Part 1: Microcontroller Technology Update

Microcontroller Memory

Learning Objectives

- Identify and distinguish between microprocessors, microcomputers, embedded controllers, and cores.
- Identify how micro and embedded controllers are categorized and specified.
- Identify important new architectures and features of micro and embedded controllers.

1. In an embedded controller, the program is usually stored in
 - a. RAM
 - b. ROM
2. Flash memory is a type of
 - a. RAM
 - b. ROM
3. What is the storage cell in a flash memory of EEPROM?
 - a. Capacitor
 - b. Flip flop
 - c. Floating gate MOSFET
 - d. Magnetic core
4. NOR flash is organized most like a
 - a. Disk drive
 - b. RAM
5. NAND flash is used more like a
 - a. Disk drive
 - b. RAM
6. The storage element in a dynamic RAM is a
 - a. Capacitor
 - b. Flip flop
 - c. Floating gate MOSFET
 - d. Magnetic core
7. The storage element in a static RAM is a
 - a. Capacitor
 - b. Flip flop
 - c. Floating gate MOSFET
 - d. Magnetic core



8. Which is faster?
 - a. Dynamic RAM
 - b. EEPROM
 - c. Flash ROM
 - d. Static RAM

9. Dynamic RAM is fast enough to keep up with most processors.
 - a. True
 - b. False

10. A cache memory is a
 - a. Kind of NAND flash
 - b. SRAM between dynamic RAM and the processor
 - c. Super fast DRAM
 - d. Type of flash memory

11. The purpose of a cache memory is to
 - a. Speed up fetch/execute operations for the processor
 - b. Store data for long periods of time
 - c. Store data only
 - d. Store program instructions

12. Where is L1 cache usually located?
 - a. In a disk drive
 - b. In a separate chip near the MPU
 - c. On a plug-in PC board
 - d. On the MPU chip

13. What is an L2 cache?
 - a. A larger cache between L1 cache and the main DRAM
 - b. A larger L1 cache
 - c. An I/O cache
 - d. An MPU chip