

KNOWLEDGE PROBE 2: MICRO & EMBEDDED CONTROLLERS

Part 2: Popular Microcontrollers and Software

Digital Signal Processing

Learning Objectives

- Identify and distinguish between the most common and popular 8, 16, 32 and 64-bit microcontrollers.
- Describe digital signal processing (DSP).

1. DSP permits almost any analog signal processing operation to be performed digitally.
 - a. True
 - b. False
2. What is at the input of any DSP circuit?
 - a. Amplifiers
 - b. Analog-to-digital converter
 - c. Mixer
 - d. Phase shifter.
3. Which of the following is NOT a typical DSP operation?
 - a. Amplification
 - b. Demodulation
 - c. Filtering
 - d. Mixing
4. The basic math operation performed by a DSP algorithm is
 - a. Add-divide
 - b. Add-subtract
 - c. Multiply-add
 - d. Subtract-multiply
5. Which of the following is generally NOT true about most DSP chips?
 - a. Harvard architecture
 - b. MAC circuits
 - c. Pipelined operation
 - d. Shifters
6. A DSP is not considered as an embedded controller.
 - a. True
 - b. False
7. Any type of CPU can be programmed to do DSP.
 - a. True
 - b. False



8. Which can be used to perform DSP?
 - a. 8-bit embedded controller
 - b. 32-core
 - c. ASIC
 - d. FPGA
 - e. All of the above

9. Which company is not a leading supplier of DSP chips?
 - a. Analog Devices
 - b. Freescale
 - c. Intel
 - d. Texas Instruments