

## MICRO AND EMBEDDED CONTROLLERS

### Part 2: Popular Microcontrollers and Software

1. Microcomputers are specified by the size of the binary words that they process. What is the most common size? How many values does that size represent?
2. How do MCUs process data and why are larger processors used?
3. What is digital systems processing (DSP)?
4. Describe how DSP works.
5. What are the four main reasons why digital signal processing is replacing traditional analog processing techniques?



6. To speed up processing, DSPs implement the MAC function with hardware so that a single clock cycle instruction can be used. What do the  $x$  values represent in the basic format for most DSP calculations?

$$Y = ax_1 + bx_2 + cx_3 + dx_4 + ex_5 + fx_6 + \dots$$

7. Describe the three types of micro software.

8. Describe the development process for embedded software.