

ME333

Quiz 2

1. What is stored in flash on the PIC32? What is stored in RAM?

- The program is stored in Program Flash memory, and the bootloader is in the Boot Flash memory.
- Program data is stored in RAM.

2. When you turn off the PIC32, what happens to data in flash? What happens to data in RAM?

- Data in flash is nonvolatile meaning that its contents are preserved when powered off.
- Data in RAM is volatile so it is lost when the PIC32 is powered off.

3. Explain why the data path between flash and the prefetch cache module is 128 bits wide, not 32 bits wide.

- The CPU (at max speed) runs at 80 MHz but the max speed of the flash on the PIC32MX795F512L is 30 MHz so reading an instruction from flash can take roughly three CPU cycles. The data path between the prefetch module and flash memory is 128 bits wide to allow it to run ahead of CPU execution despite the slower flash load times.

4. Give the names of the four distinct sections in the physical memory map.

- Data RAM, Program Flash, Peripheral SFRs, Boot Flash (configuration bits).

5. Indicate which of these six peripherals is present on the PIC32.

Analog output, analog input, digital output, digital input, bluetooth, pulse width modulation

6. Most pins on the PIC32 can serve different functions. What sets the particular function for each pin?

- The special function register (SFR) corresponding to that pin sets its function.