

EXAM FORMAT

These formats are possible.

- Multiple choice
- Fill-in-the-blank
- Design solutions to solve a new problem on the processor or add an instruction
- Calculations – calculators are allowed
- Drawing
- Descriptions of things in short essays
- Assembly of instructions to IROM binary numbers
- Disassembly of IROM binary numbers to the corresponding instruction
- Hazard tables
- Assembly language programming
- Cache memory hashing tables

EXAM FOCUS

The final exam is comprehensive but **will not include** the following material.

- Historical information
- Names of key computer architects.
- Names of chips and chip families.
- Three categories of the computer industry and the types of computers that are used in them.

All other material is testable.

CAN YOU DO THESE THINGS?

- Draw the single-cycle processor.
- Describe every single in the single-cycle processor.
- Draw the Princeton and Harvard organizations.
- Extend the single-cycle processor to include a new instruction.
- Talk about how the pointer and offset are used to access memory.
- Describe how stuck-at signals would affect the processor.
- Discuss pipelining concepts like pipeline registers, hazards, forwarding, and flush.
- Write assembly language and move between instructions and binary numbers.

ALLOWED AT EXAM

- Cream-colored ARMv4 Reference Card as distributed by the instructor with **no student text written**. Any text that you have already must be approved by the instructor at the start of the final exam.
- Calculator
- Pencils, pens, and erasers