

After his lecture you should be able to answer the following questions:

1. What is RISC and what are the characteristics?
2. What is CISC and what are the characteristics?
3. what are register windows and how do they improve performance?
4. The compiler becomes much more important with the IA-64? What new expectations are placed on the compiler?
5. What is the importance of instruction format for the IA-64 and how does it help machine level parallelism
6. What is SISD and MIMD?

Multiple choice questions (answers on the next page)

1. which best describes register windows?
 - a. A program/subroutine that see all the registers, using only the ones it needs
 - b. A program/subroutine that sees only a subset of registers available
 - c. The user can see the register through the side of the computers
 - d. The processor has a number of specialized registers, grouped together as a window
2. Whic best descibes pipelining?
 - a. Executing two or more instructions in parallel
 - b. overlapping operations of several instructions
 - c. has two or more ALU units
 - d. unrolling software loops.
3. Which best descibes a RISC Processor?
 - a. simple instruction set, large number of general purpose registers
 - b. large instruction set, large number of general purpose registers
 - c. smiple instruction set, large number of specialized registers
 - d. large instruction set, large number of specialized registers
4. What is NOT the intention of a CISC processor?
 - a. Ease of compiler writing
 - b. Improved execution efficiency
 - c. limited instruction set
 - d. support for high level languages
5. the IA-64 architecture has how many instructions per bundle?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
6. The predicate register allows the processor to
 - a. speculatively execute both branches
 - b. load data before it needed
 - c. unroll loops.
 - d. optimize instructions at run time.
7. Both superscalar and IA-64 Architecture need _____ in order to have parallelism
 - a. one instruction per word
 - b. multiple execution (ALU) units
 - c. multiple cores
 - d. super piplining

8. Which of the following best describes the organization of a Symmetric Multiple Processor (SMP)?

- A. Single instruction, single data stream
- B. Single instruction, multiple data stream
- C. Multiple instructions, single data stream
- D. Multiple instructions, multiple data stream

9. When the access times to different regions of memory may differ, it's called

- A. Symmetric Multiple Processors
- B. Time Shared bus
- C. Loosely Coupled
- D. Non Uniform Memory Access

10. When two or more processes on a SMP are working on the same data in parallel, the big problem becomes

- A. Bus contention
- B. Cache coherence
- C. NUMA
- D. scalability

1. b 2. b 3. a 4. c 5. c 6. a 7. b 8. d 9. d 10. b