

Please form groups of 3-4 people and discuss some of the following questions (closed book and notes). Write down answers based on your discussion.

1. What does it mean for memory to be byte-addressable? Given different architectures (e.g. Zniac, Intel Core i7, ARM, ...) is memory always byte-addressable?
2. Why is caching useful? Why does it work? Name 3 different applications of caching in modern computers.
3. What is virtual memory? List some of its advantages.
4. What is the difference between combinational and sequential circuits? To which category do the following belong: Adder, multiplier, shift register, counter, multiplexer, RAM, XOR?
5. Can an AND gate be built from NAND gates? Can a NAND gate be built from AND gates?
6. What are some techniques to prevent buffer-overflow attacks?
7. Why do we need a runtime stack? (Why not simply set aside a certain section of memory for each function in our program instead?)
8. In what sense is Java a “safer” language than C?