

Name: KEY

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COE 205, Term 091
Computer Organization & Assembly Programming
Quiz# 1

Date: Wednesday, Oct. 21, 2009

Q1. Fill the blank in each of the following:

1. Assembly language is a programming language that uses symbolic names to represent operations, registers and memory locations.
2. There is one-to-one correspondence between assembly language instructions and machine language instructions.
3. Assemblers translate assembly to machine code while Compilers translate high-level programs to machine code.
4. Three advantages of programming in high level language include Program development is faster, Program maintenance is easier, and Programs are portable.
5. Two advantages of programming in assembly language include Accessibility to system hardware and Space and Time efficiency.
6. The Linker combines program's object file with other object files and link libraries, and produces a single executable program.
7. The Instruction Set Architecture provides a hardware/software interface.
8. With a 32 bit address bus, the physical address space is $2^{32}=4\text{GByte}$.
9. Dynamic RAM is denser and cheaper than static RAM but slower.
10. Cache memory is used to bridge the CPU-memory performance gap.

11. Seek time is the time of head movement to the desired track while rotation latency is the time of disk rotation until desired sector arrives under the head.
12. The decimal number 1000 is represented in binary as 11 1110 1000 and in hexadecimal as 3E8.
13. Using 16 bits, the range of represented unsigned numbers is 0 to $+(2^{16}-1)$ while the range of 2's complement signed numbers is -2^{15} to $+(2^{15}-1)$.
14. Using 8-bit 2's complement, the number F0 represents the decimal value -16.
15. Assuming 16-bit 2's complement representation, the operation $FFF2 - 7FFF$ produces the result 7FF3 and will set the over flow flag to 1 and the carry flag to 0.
16. Assuming that an 8-bit register contains the hexadecimal value C5 representing a character, the character stored is E and the parity used is even. Note that the ASCII code of character 'a' is 61h.