Name: KEY   **Id#**

COE 205, Term 092

Computer Organization & Assembly Programming

Quiz# 1

Date: Saturday, March 6, 2010

Q1. Fill the blank in each of the following:

1. <u>Assembly language</u> is a programming language that uses symbolic names to represent operations, registers and memory locations.

2. Assemblers translate <u>assembly language to machine language</u> while compilers translate <u>high-level language to assembly or machine language</u>.

3. The <u>opcode</u> field in an instruction specifies the particular operation that is to be performed.

4. Two advantages of programming in high level language include <u>Program development is faster</u> and <u>Programs are portable</u>.

5. Two advantages of programming in assembly language include <u>Accessibility to system hardware</u> and <u>Space and Time efficiency</u>.

6. Use of assembly language is more appropriate than high level language for the following type of applications: <u>hardware device driver</u> and <u>Embedded systems and computer games requiring direct hardware access</u>.

7. The linker is used to <u>combine program's object file with other object files and link libraries, and produce a single executable program</u>.

8. The <u>debugger</u> allows the tracing of program execution and the ability to view code, memory and registers.

9. The instruction set architecture of a computer consists of the instruction set, Memory and programmer-accessible registers.

10. The control unit generates the control signals required to execute instructions.

11. With a clock frequency of 2 GHZ the clock cycle time is 0.5 ns.

12. With a 36 bit address bus, the physical address space is 2^{36}=64 GByte.

13. The CPU-Memory interface consists of address bus, data bus and control bus.

14. In 1980, there was no need for having a cache memory because there was no performance gab between CPU and memory performance.

15. DRAM is slower than SRAM because it needs refreshing and is denser because each cell is based on one transistor and a trench capacitor vs. 6 transistors in each SRAM cell.

16. Cache memory is a very fast type of RAM that is used to store information that is most frequently or recently used by the computer.

17. The disk access time is computed based on seek time, rotation latency and transfer time.