

## CS 150E LONG EXAM 1

### 1. EXPAND THE ACRONYMS (1 PT EACH)

- (1) CISC
- (2) SMP
- (3) ZIF
- (4) MMX
- (5) CPU
- (6) DRAM
- (7) ALU
- (8) IR
- (9) PC
- (10) MAR

### 2. ENUMERATION

- (1) Instruction Cycle (5 pts)
- (2) Pipelining Hazards (3 pts)
- (3) Pipelining Solutions (4 pts)
- (4) Levels in the Memory Hierarchy (4 pts)
- (5) Levels in Logic Representation (4 pts)

### 3. DEFINITION (4 PTS EACH)

Define each term to the best of your abilities. You must be able to clearly state the purpose and at least one benefit of the said technology. Recursive definitions are not allowed.

- (1) Pipelining
- (2) Overclocking

### 4. ESSAY (3 PTS EACH)

Each comparison must have at least three (3) differences among the items being compared.

- (1) Compare RISC vs. CISC
- (2) Compare AMD Athlon vs. Intel Pentium
- (3) Compare Hardwired vs. Microprogrammed CPU
- (4) Compare Software vs. Hardware Implementations

### 5. PROBLEM SOLVING (5 PTS EACH)

- (1) Solve for the cost of the entire package. Assume the following costs:
  - Wafer Cost - 400 USD
  - Test Cost - 5 USD
  - Packaging Cost - 10 USD
  - All Yields - 30 Percent

- (2) Assume that a single device has three portions that is improved. The first component is improved by 20 percent and affects 10 percent of the system. The second component is improved by 5 percent and affects 50 percent of the system. The third component is improved by 90 percent and affects 2 percent of the system. Which component contributes the most to the speedup of the device. Explain clearly and show solutions.

6. BONUS (1 PT EACH)

- (1) Who invented Linux?
- (2) What is the world's most popular webserver?
- (3) Who wrote the book entitled "The Cathedral and the Bazaar"?
- (4) What is the latest release of RedHat Linux?
- (5) What does AteneoCNG mean?

DEPARTMENT OF INFORMATION SYSTEMS AND COMPUTER SCIENCE, ATENEO DE MANILA UNIVERSITY,  
LOYOLA HEIGHTS, QUEZON CITY, 1108 PHILIPPINES  
*E-mail address:* wyu@ateneo.edu