Spring 2009 CS 320 Exam 2 Review

Note: Keep in mind that this review is designed as a practice exam & is not intended to be comprehensive. While studying for the exam, it would be prudent to consider variations on the questions presented here. You should also include the homework questions when reviewing for the exam. Finally, it is possible to get strong clues for answering some of the questions in the review by referring to other questions. In general, you should not depend on in the actual exam.

Explain pipelined execution. What are the formulas used to determine the number of cycles required for pipelined and non-pipelined instructions to execute? You may wish to draw a couple of diagrams to illustrate your answer.

Suppose a round robin scheduler assigns 150 milliseconds per task & takes 7 milliseconds to switch between tasks. If there are currently 8 tasks being processed, how long does it take a full circuit through the task list?

List all the general purpose registers and their size(s).
List the special function of at least one of them.

List the three IA-32 memory management modes. Explain how real-address mode manages to use 20-bit addresses with 16 bit registers.

What does CISC stand for? What are the primary defining characteristics of CISC architectures?

Describe the multi-segment (memory) model.

Describe paging.

What is the difference between an assembly instruction & a directive? Give an example of each.

What are labels? Give an example of each type.

Write the code necessary to create an array of 6 double words such that they are initialized to the values A_{16} to F_{16}.

Write the code necessary to sum the contents of the array you created in the previous question above.

Consider the following code & determine the final contents of the registers eax, ebx, ecx, & edx.

```
.data
array  DWORD  5  DUP(0BEEFh)

.code
mov eax, TYPE array
mov ebx, LENGTHOF array
mov ecx, SIZEOF array
mov edx, WORD PTR array
```