

Name: \_\_\_\_\_

You have 120 minutes to complete this exam. Time will begin as soon as you start reading the first question.

- You may use any material, including the text book, lecture slides, and notes. You may also use anything found on the Internet that existed before the exam started.
- You may NOT communicate with any other person during this exam, either in person or using electronic means.

As strategies for completing the exam, keep the following in mind:

- If you find a question to be ambiguous, make reasonable assumptions as you see fit, but write down your assumptions.
- You are more likely to get partial credit for a wrong answer if you show your work.
- Be careful not to get carried away and run over the time limit by spending too much time on one question. Plan ahead, and don't devote more time to a question than it is worth.

Please write your answers in the space provided.

Score Summary (for use by grader)

Question	Possible points	Actual points
1	10	
2	15	
3	15	
4	15	
5	20	
6	15	
<b>TOTAL</b>	90	

**1. [10 points total] Processors.** Intel's previous generation CPU, the Pentium 4, topped out at 3.8 GHz. The company's newest processor, the Core Duo 2, runs at 2.33 GHz.

A. [3 points] What exactly is GHz? (a sentence or less)

B. [3 points] What is the GHz rating actually measuring? (a sentence or less)

C. [4 points] Comparing the two chips, we note that the GHz rating of the Pentium 4 is higher than the GHz rating for the Core Duo 2. Does this actually mean that the Pentium 4 is a faster processor? Explain. (a few sentences or less)

**2. [15 points total] Downloading movies.** Going to Blockbuster to rent a movie is so last century. Even NetFlix will eventually give way to video-on-demand, where you (legally!) download movies onto a hard drive and play back on your TV. This question explores such video-on-demand services.

A. [5 points] Approximately how much space does a feature-length DVD-quality film take up?

B. [5 points] How many CDs would it take to store a feature-length DVD-quality film?

C. [5 points] Approximately long would it take to download a feature-length DVD-quality film over a typical household Internet connection?

NOTE: You may need to search for information on the Web in order to answer this question. Values might vary depending on source, but any reasonable number will be accepted. For reference, you might choose to include the URL of the source.

**3. [15 points] Horizontal vs. vertical navigation bars.** For some Web sites, the navigation bar runs vertically along the left edge of the screen. For other Web sites, the navigation bar runs horizontally along the top edge of the screen. What are the advantages and disadvantages of either approach? (a few paragraphs at most)

**4. [15 points] Toaster.** In what way is a toaster well designed? Explain explicitly using concepts introduced in Week 3. (a few paragraphs at most)

**5. [20 points] XML.** List five differences and five similarities between HTML and XHTML. (bullet points)

**6. [15 points]** Discuss three different ways in which XML standards emerge. (a few paragraphs at most)