



**Okay, okay, just kidding about those last three questions; you don't need to decode or answer them. The following questions should look *easy* in comparison! (3 points each.)**

*The following questions are meant to help you to understand the concepts that the class has been covering. Please answer each in no more than three sentences. We're not looking for a definition from a book, but instead something akin to what you'd say in a conversation if you were asked these questions.*

4. What is a computer peripheral?
5. What is the difference between input and output?

**Binary. (3 points each.)**

*Please answer the following questions, taking care to show your work.*

6. How do you represent the decimal number 8 in binary?
7. Translate the binary number 11 to decimal.

**True or False. (3 points each.)**

*For each of the following statements, specify whether it is true or false.*

8. CD-RWs can be read or written, but only once.
9. A PDA can store several DVDs worth of information.
10. The resolution of a monitor refers to the number of pixels that span the screen horizontally and vertically.
11. ISA, PCI, and AGP cards can all be placed into interchangeable expansion slots in a laptop.

**Short Answers. (6 points each.)**

*Please answer each of the following questions in one or more sentences.*

12. Suppose that you buy a brand-new computer and your mom sneaks into your room (right past the “no girls allowed” sign) and uses it while you're at school. Unfortunately, her floppy disk gets stuck in the—uh-oh—Zip drive!

It's a fact that certain brands of new computers don't have FDDs. Hypothesize why. Is such a good thing?

13. Suppose that your mom takes you to the park. (You've been good.) After playing on the swings for a while, you decide that you want to play Frisbee, but, darn, you've left your Frisbee at home! Mom says, "Here, you can use one of these!" She hands you a DVD-ROM and a CD-ROM. Hmmm, which one should you use?

CD-ROM discs and DVD-ROM discs look exactly the same, and, yet, they're priced differently and hold different amounts of information. How is that possible? How much information can be stored on a DVD-ROM versus a CD-ROM?

14. Please briefly explain the function of the BIOS, CMOS, and ROM and how they're interrelated. Be sure incorporate into your answer whether they're hardware or software.

**Matching. (3 points each.)**

*Match each of the nine items in the left-hand column with the most appropriate descriptor in the right-hand column. For each item, only one descriptor is (most) appropriate; you should use each descriptor exactly once.*

- |                 |                 |
|-----------------|-----------------|
| 15. L1 cache    | A. 32-bit color |
| 16. register    | B. 128 KB       |
| 17. RAM         | C. 512 MB       |
| 18. L2 cache    | D. 2.4 GHz      |
| 19. HDD         | E. 650 MB       |
| 20. CPU         | F. 512 KB       |
| 21. monitor     | G. 1.44 MB      |
| 22. CD-R        | H. 32 bits      |
| 23. floppy disk | I. 80 GB        |

**Main Entry:** motherboard

**Pronunciation:** -"bOrd, -"bored

**Function:** *noun*

**Date:** 1972

**:** the main circuit board especially of a personal computer

**:** how David's mom feels when he goes on and on about the specs of his laptop

**(3 points each.)**

*At Lecture 1, you received a large, color handout of an Intel Desktop Board D845EBT. The same handout is available off of the "Lectures" link on the course website. Please answer each of the following questions regarding the Intel Desktop Board D845EBT in one or more sentences.*

24. Up to how much memory can a computer with this Intel motherboard have?
25. What component could you place into the slot labeled "1" in the photograph? What is the purpose of that component?
26. How many expansion slots does the Desktop Board D845EBT contain? What is the purpose of those slots?
27. What hardware could you place into the slots labeled "3" in the photograph? What is the purpose of that hardware?
28. What processor does the Intel Desktop Board D845EBT support?
29. What devices might you connect to the two serial ports on the board?
30. What devices might you connect to the USB ports?
31. What components could you connect to the slots labeled "8"?

**This Next Part is All about You @fas.harvard.edu. (6 points.)**

*If you have never surfed the Web before or will not have access to the Internet between now and this problem set's deadline, please speak with a member of the teaching staff before this problem set's deadline. Do not fret if you have trouble answering the question below on your own; simply contact us for help.*

32. As a student in this course, you are eligible for a computer account on the Faculty of Arts and Sciences (FAS) system. An FAS account allows you to send and receive electronic mail via the Internet. It also allows you to use Harvard's computer labs and laser printers in the Science Center and at 53 Church Street. All FAS account services are free, except for a \$0.05-per-page charge for laser printing at the Science Center.

Without an FAS account, you will be unable to participate in the hands-on portion of various section activities, you may be unable to complete certain assignments, and you will be unable to complete your final project.

Visit <http://www.fas.harvard.edu/computing/utilities/activate/> to obtain your FAS account. Once at that URL, simply follow the on-screen instructions. Note that you will

be prompted for your “8-digit Harvard ID number,” which can be found on your letter of registration for this course.

Once done with the account-creation process, answer the following question.

What is your newly acquired FAS username?

**Extra Credit. (5 points.)**

33. What number, in decimal notation, is represented by 101110000000100101000101111001101? What is the significance of that decimal number?

Now, how do you write the number 4,294,967,294 (given in decimal notation) in binary notation?