Name: _____

**CS 33006** **Final Exam** **Social & Ethical Issues**

**Monday 2 May 2011**

1. **What "rights" are given to the owner of a copyright? (10 points)**

   The right to control the reproduction, distribution, public display, public performance, and production of derivative works for a limited period of time.

2. **Why did the US Supreme Court rule that time shifting a television show to watch it later was "fair use" and Sony was not infringing on copyrights with the Betamax VCR? (10 points)**

   Time shifting like this was acceptable because it was for private use and did not really affect the commercial value of the broadcasts. Sony was not at fault because their product could be used for lawful purposes and they were not promoting it for illegal use.

3. **What are the benefits of open-source software? (10 points)**

   Many people have an opportunity to improve the software. New versions of the software can appear frequently. Open-source eliminates the tension between obeying the law and helping others. Programs belong to an entire community. The focus shifts from manufacturing to service.

4. **The Third Amendment to the US Constitution says "No Soldier shall, in time of peace be quartered in any house, without the consent of the Owner, nor in time of war, but in a manner to be prescribed by law". Why was this so important that it needed to be a Constitutional Amendment? (10 points)**

   English common law held that "a man's home is his castle", and rejection of forced quartering of troops in houses was reaffirmed in the English Bill of Rights in 1689. Then England passed the Quartering Act, allowing military troops to be placed into colonial houses, which was seen as taking away their basic rights as English citizens. Thus the Amendment was added to the US Constitution, once again rejecting forced quartering.

5. **What is the National Crime Information Center database, and why does it raise privacy concerns? (10 points)**

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The NCIC database is a collection of databases related to various crimes, which originally started with information from just five databases, though it has grown over the years. Concerns include erroneous records that have led to false arrests, confusion over duplicated names, using the database to track people not suspected of any crime, and misuse of the database information.

**6. What was "phone phreaking"? (10 points)**

Manipulating the phone system to get (long-distance) free phone calls. Popular methods included stealing long-distance access codes, guessing those codes, or using a "blue box" to generate the tones necessary to access the long-distance lines.

**7. What is a denial-of-service attack, and what are some preventive measures that can be taken against such attacks? (15 points)**

An attack to disrupt a server's ability to respond to its clients and prevent legitimate users from making use of a computer service — commonly through SYN flood attacks, Smurf attacks, or email bombing. Defensive measures include disk quotas, disabling unused network services, turning off routers' amplifier network capability, and using patern recognition software to recognize denial-of-service attacks.

**8. The class textbook discussed five notable examples of software system failures, including the Patriot missile system, the Ariane 5 launch vehicle, AT&T's long-distance network, NASA's robot mission to Mars, and the automated baggage system at Denver International Airport.**

**a. It is common to reuse code in a software system, but what potential problems can occur when reusing code? (5 points)**

Assumptions based on hardware, or the environment, or the users, etc. may be made in one piece of software, but not documented. If that code is then reused and the assumptions are no longer valid, the code may not work as expected.

**b. Why is it appropriate to consider these software system failures in a class entitled "Social and Ethical Issues in Computing"? (10 points)**

Designers of a software system have an obligation to design software that works correctly, and have an obligation to the pubic to not cause harm by their poor professional practices.

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**9. The Software Engineering Code of Ethics is not a highly detailed document, consisting only of a short preamble and eight short sections, each with a dozen or so numbered items. Why is this sufficient, instead of having a much more detailed document? (10 points)**

It is not intended as a comprehensive list of everything that a software engineer should and should not do. Instead, the preamble describes the motivation and spirit of the code, and the principles give some specific examples, with the assumption that the software engineer will use these as guides to analyze any actions not specifically addressed in the code.