Preview Assessment: Midterm

Name	Midterm
Instructions	You will be given the questions in a pdf format and you will have two attempts to answer the multiple choice, true false, and matching questions. You may use the Internet, books, and notes. You may NOT talk to anyone about this midterm. Speaking in any way, even to ask if someone has finished, is not permitted. By accessing the midterm you agree to complete it without talking to anyone other than Prof. Astrachan about the midterm and the questions in it.
Multiple Attempts	Not allowed. This Test can only be taken once.
Force Completion	This Test can be saved and resumed later.

▼ **Question Completion Status:**
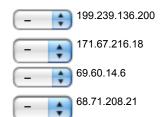
Question 1   **1 points**   Save

Which one of the following is **NOT** true regarding sending information over the Internet.

○ Messages sent over the Internet are divided into packets, and it's possible that different packets/parts of a message take different routes from their source to their destination.

○ It is possible for packets sent over the Internet to be lost or dropped, but when this happens the missing packets can be reconstructed from the packets around them as long as their aren't too many gaps or as long as the gaps are small enough.

○ Routers on the Internet know about IP addresses like 152.3.250.1, used to route messages, but routers do not know about domain names like www.nytimes.com.

○ Streaming movies and songs often use a different protocol for the packets by which they're sent than the protocol used for message like email since email packets must be more reliable than movie packets, i.e., it would be ok to miss a frame of a movie, but not to miss part of an email message.

Question 2   **1 points**   Save

Match each of the following IP addresses with the domain to which it corresponds. You'll need to devise a strategy for determining how to do this, all the domains correspond to URLs that you can enter into a browser, as do the IP addresses.

[– ▲▼] 199.239.136.200	
[– ▲▼] 171.67.216.18	A. stanford.edu
	B. nytimes.com
[– ▲▼] 69.60.14.6	C. huffingtonpost.com
	D. espn.go.com
[– ▲▼] 68.71.208.21	

Question 3   **1 points**   Save

Rank the numbers below from greatest/most to fewest/least with the greatest first. You may need to search online for help, you may be able to reason about answers. Numbers cited should be for 2010.

Number of minutes spent on Facebook, in total by all users on Facebook, in one month.

Total number of SMS/text messages sent in a month world wide.

Total number of IP packets sent over the Internet in one month in 2010.

Total number of Twitter messages, aka tweets, sent in a month in the United States.

Question 4   1 points   Save

What is the last name of the founder of the Free Software Foundation (capitalize the first letter, spell it correctly).

Question 5   1 points   Save

Prof. Astrachan showed a video parody of the Hitler Downfall scene that is particularly relevant to Compsci 82. The video has been taken down by YouTube, but its reinstatement requested because of a fair use argument. Which one of the following four prongs needed for fair use is *least likely* to bolster the case for reinstatement on YouTube?

○ The purpose and character of the use (the parody), including whether such use is of a commercial nature or is for nonprofit educational purposes and whether it is transformative.

○ The nature of the copyrighted work, i.e., the movie *Downfall*.

○ The amount and substantiality of the portion used in relation to the copyrighted work as a whole.

○ The effect of the use upon the potential market for or value of the copyrighted work.

Question 6   1 points   Save

The EFF, the Electronic Frontier Foundation, publishes white papers and helps with legal cases relevant to the Internet. Prof. Seltzer, who visited Compsci 82, worked for the EFF as a staff attorney at one point in her career. Which of the stances below related to the DMCA is *least likely* to be found in a publication of the EFF?

○ Anticircumvention provisions in the DMCA have had a chilling effect on academic and public use of copyrighted materials.

○ iPhone users and developers should be able to "*jailbreak*" their phones without fear of reprisal, retaliation, or legal sanctions due to the DMCA.

○ The safe harbor provisions of the DMCA have enabled user-generated content sites such as Flickr, YouTube, and others to flourish because of copyright safeguards inherent in the DMCA safe harbor law.

○ The DMCA impedes competition and innovation; for example, the DMCA has been used to block aftermarket competition in laser printer toner cartridges and garage door openers.

Question 7   1 points   Save

Oracle is suing Google over patent infringement related to the programming language Java which was licensed under the GPL when Java was developed by Sun --- Sun was purchased by Oracle last year. Which one of the following is *least relevant* as to how and why Oracle is suing Java?

○ Patents and copyright are both parts of intellectual property law, but where the two areas intersect can be the source of friction and problems.

○ Oracle purchased Sun so Oracle now owns the copyright for Java and as the copyright holder can legally enforce claims about it, even if Java is licensed under the GPL.

○ Legal precedents hold that patent protections are stronger and/or more powerful than copyright in a strictly legal sense, so the patent lawsuit makes sense even though Java is licensed under the GPL.

○ Businesses engage in lawsuits for complex business reasons that are sometimes outside the scope of the legal reasons for the lawsuits.

Question 8   **1 points**   Save

Course Hero (coursehero.com) claims that is the "#1 Study Resource for College and High School Students" and carries a label that says "Higher GPA guaranteed". Students post course notes and exams to the site for others to use. Which one of the following is most likely the reason that the website has the *copyright infringement* page at http://www.coursehero.com/copyright.php ?

○ So that students will be able to (or be required to) click an agreement that they're not violating copyright laws when they upload material to course hero, thus protecting coursehero.com from legal actions.

○ To keep duplicate content from the same course from being uploaded by different students in the same course.

○ To ensure that coursehero is protected under the DMCA and the law's safe harbor provisions protecting content providers.

○ To ensure that professors and other content providers whose materials are used on coursehero can get or have access to money or other financial incentives when their material is downloaded from coursehero.

Question 9   **1 points**   Save

Which ONE of the following video clips has **NOT** been shown in Compsci 82 for the reason indicated?

○ A clip from *Ferris Bueller's Day Off*, with Ben Stein as a teacher, to illustrate both fair use and how to teach a class.

○ A clip from the movie *Braveheart* and the call for freedom, a call also made by Richard Stallman in the context of free software.

○ A clip from the Daily Show in which Demetri Martin explains the issues behind the lawsuit between Viacom and Google/YouTube.

○ A clip from the movie *The Net*, with Sandra Bullock, explaining how open source software could have made a difference in her case of identity theft/erasure.

Question 10   **1 points**   Save

An IPv6 IP address looks like this *3ffe:1900:4545:3:200:f8ff:fe21:67cf* whereas an IPv4 IP address looks like this *152.3.250.1*. Which one of the following is the best explanation for this difference?

○ IPv4 addresses are 32 bits long, each part of the address between the periods/dots represents 8 bits. An IPv6 address is 128 bits long, each part between the colons represents 16 bits.
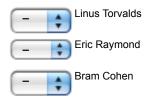
○ IPv6 addresses use letters and digits rather than just digits as with IPv4 addresses because there are only 10 digits but there are many more letters than digits.

○ Routers can tell the difference between an IPv4 address and an IPv6 address by detecting colons and periods/dots, where the presence of a colon, for example, indicates an IPv6 address.

○ Since an IPv6 address has 128 bits, an IPv4 address has 32 bits, and there are 26 letters in the English alphabet, the requirements inherent in the international Unicode standard for representing letters require 16 bits per character/letter whereas the ASCII standard only requires 8 bits per letter.

Question 11   **1 points**   Save

When Prof. Seltzer spoke to the class about the DMCA which one of the following analogies did she use in describing an effect of the law?

○ The DMCA made it possible for individuals like Prof. Seltzer to go up against the NFL with copyright issues, the way David went up against Goliath. The DMCA was the sling used by Prof. Seltzer to throw a stone against the NFL-Goliath-Copyright holder.

○ The legal locks provided by the DMCA complement the technical locks provided by Digital Rights Management (DRM) software the same way that locksmiths can use a lock of human hair to thread wire through jammed deadbolt locks.

○ The Gallery of CSS Descramblers shown by Prof. Seltzer is similar in its artistic beauty to museums like the Louvre in Paris or the Nasher in Durham while having a technical depth similar to the depth of the Deep Water Horizon well that spilled oil in the Gulf of Mexico.

○ Before the DMCA it would have been ok to build your own record player to play a vinyl record. After the DMCA it wasn't ok to write your own software to play a CSS-encrypted DVD on a Linux computer.

Question 12   **1 points**   Save

The Declaration of Independence for the United States is still protected by copyright so using the phrase "We hold these truths to be self-evident, that all men are created equal" requires permission of the US government since the phrase is part of the Declaration.

○ True
○ False

Question 13   **1 points**   Save

The cost of obtaining a patent is limited by law to what the US Patent office allows, including legal fees that are also limited by law so that obtaining a patent typically costs less than $2000.

○ True
○ False

Question 14   **1 points**   Save

The limit of roughly 4 billion IPv4 addresses ensures that there cannot be more than roughly 4 billion devices connected to the Internet today --- even with technical solutions like Network Address Translation (NAT) that permit addresses to be shared.

○ True
○ False

Question 15   **1 points**   Save

Which one of the following is **FALSE** regarding peer-to-peer networks?

○ It was straight forward to shut the p2p network Napster down because the directory of the location of files in the network was stored on a central server.

○ Although Skype started as a peer-to-peer network it now exclusively uses a client-server model especially because it's difficult to cope with bootstrapping issues.

○ Both Grokster and Limewire were ordered shut down because of copyright violations despite evidence that these p2p networks could be used for some non-infringing uses. The inducing, contributory, or vicarious infringement arguments outweighed any such non-infringing uses.

○ It is difficult to stop the BitTorrent p2p network because the BitTorrent protocol is completely open, the network is very distributed, and because files are downloaded and uploaded in pieces it's hard to distinguish completely who is doing the uploading or downloading.

Question 16   **1 points**   Save

The original ARPA-net, the precursor of today's Internet, consisted of four machines in 1969: three in California and one in Utah. Since that time the number of computers in those two states that are connected to the Internet has always been a power of two at the end of each year to honor the pioneering spirit of the early Internet.

○ True
○ False

Question 17   **1 points**   Save

In speaking with the class about copyright, Duke Law School Prof. Jennifer Jenkins told about how the images stored and used by Google to facilitate image search were deemed *transformative* by the legal system because the images were used for a purpose that was very different than their original purpose -- it was the purpose and not the images themselves that was transformative.

○ True
○ False

Question 18   **1 points**   Save

Neither of our guest speakers to date: Wendy Seltzer and Jennifer Jenkins, has a smartphone, neither has written computer software, and neither browses the web because of their dedication to only using free and open source software.

○ True
○ False

Question 19   **1 points**   Save

Match each person to his contribution to free and open source software.

[− ▲▼] Richard Stallman

        A. Bittorrent: the primary p2p protocol used on the
           Internet in 2010.

[—] [▲▼] Linus Torvalds	B. Making a case to the business community for open source software.
[—] [▲▼] Eric Raymond	C. Creating Linux, an operating system used on many computers today.
[—] [▲▼] Bram Cohen	D. Creating a compiler used in developing Unix and working to ensure that free software is differentiated from open source software for philosophical reasons.

Question 20   **1 points**   Save

Based on our readings and discussions, which ONE of the following is **NOT** true regarding the Internet today?

○ Content providers such as YouTube use content distribution networks to help ensure that requested content is close to customers/clients and that content gets to clients quickly even when there is high demand for it. The content is replicated, not stored on a single server.

○ It is possible to write a BitTorrent software client to "cheat" in obtaining content more quickly than other clients do without sharing the same way other clients are supposed to share when they follow the BitTorrent protocol.

○ Although patents were designed to encourage innovation and some claim that patents actually stifle software innovation, there has been no legal enforcement of software patents by any company that has resulted in lost revenue for another company.

○ Many businesses embrace open source software while generating significant revenue selling products including the same software whose source code is available without paying for it.

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