

*CMPSCI 120 Spring 2011  
Review Questions for Midterm #1*

**MISCELLANEOUS**

What happened in 1955 that was significant for the future of computers?

What is rule # 34?

List 3 Anti-Virus programs.

**BIAS, POLLS, AND SEARCHING**

Who is the easiest person in the world to fool?

Does correlation equate to causality?

Explain the relationship between correlation and causality

We talked about cognitive biases in this class. Name one and explain what it is.

Name 2 different types of bias and give a brief description of what it is or give an example of it.

What are confirmation and hindsight bias?

Also, provide a simple example of a hindsight bias.

What does pareidolia mean?

How can you trust your search results?

How does an individual know to trust a website?

What are the negative aspects of online polls?

For the most part, why are online polls unreliable?

How useful and accurate is an internet poll?

Are internet polls valid sources of information? Explain why, yes or no.

Why are internet polls unreliable?

Why are many internet polls biased?

What does to "Pharyngulate a poll" mean?

Name three reasons why information received from Internet polls should not be trusted.

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Is it a good idea to have a survey with one "yes" answer and two "no" answers? Why or why not?

What are some ways you know you can trust a website?

How do Google, or many of the highly used search engines, get so many references when you search something?

Name at least 5 common search engines.

Name some examples of search techniques.

**BITS, BYTES, AND BASES**

What is the smallest unit of information and what are its values?

What is a bit?

What is a byte?

What are the differences between a bit and a byte?

How many bits are in each Byte?

How many unique patterns are there in each Byte?

What does a byte contain?

What is the minimum byte value and what is this value equivalent to in base 10?

What is the maximum byte value, and what is its equivalent value in base 10?

What base is hexadecimal?

How many bytes will fit into two hex digits?

Convert the binary number 11110111011 to base 10.

Base 16 is called \_\_\_\_\_.

Convert the decimal number 155 (base 10) to binary.

What is  $1456_{10}$  in base 2

A byte has \_\_\_\_\_ bits, in \_\_\_\_\_ unique patterns. Fill in the corresponding #s.

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1101 1001 translates to what in hex?

What is the base 2 number of the base 10 number 143?

Convert the number 937 into Hex.

What number does the letter "A" stand for in hexadecimal?

How many patterns are there for "N" bits?

Solve X in the following equation: 172 base 10 = X base 2

Solve X in the following equation: 01101011 base 2 = X base 16

What is 1234 in binary?

What is 0110100001101001 in base ten?

How many unique digit values are in hexadecimal?

How do we represent numbers past 9 in hexadecimal?

Convert 01001110 from base 2 to base 10

Convert 139 of base 10 into base 2.

Convert 238 of base 10 into base 16 (hexadecimal).

Convert the base 10 value of 140 into base 16 (hexadecimal) using whichever method you prefer.

Convert 137 from base 10 to base 2.

How do you represent the number 210 in binary code?

**THE INTERNET**

What was the ARPANET?

What year did the "Internet" come about?

What year did the "Web" come about?

What was the first practical computer internet network, who or what implemented it and when?

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When was Amazon.com founded?

When was the modern incarnation of the internet "born", and who is the man credited with its invention?

Traditionally, what are the top 6 level domains?

What is an example of a top level domain?

Which top level domains are affiliated with the government/military?

**NETWORKS AND ROUTING**

Name the four types of networks we discussed in class with a brief explanation.

What is "sneakernet"?

What is a serial-port network?

What is the major flaw of a network connected via serial port?

What is a "point-to-point" network?

What are the advantages and disadvantages of a fully connected network?

What is the formula for the amount of links a fully-connected computer network uses?

How many links would it take to make a network of 4 directly connected computers?

If there are 5 computers on an old-fashioned wired network, how many connections will there be? What is the formula to determine this?

What is a star network?

How does the star network work?

What are some of the constraints and disadvantages of the "star" network?

Explain the advantages and the disadvantages of a star type network.

What type of network requires an expensive, very fragile master computer that controls all traffic among the network but only requires one link per satellite?

Describe a token ring network.

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What is the benefit of having a "token ring" network?

How is a message sent through a token ring network?

What is the problem in token ring network types?

What notable company was deeply interested in the "token ring" network design?

What is Ethernet?

Explain how Ethernet network works, and how it can fail.

What is one problem of Ethernet?

How many wires are in an Ethernet cable?

What is the RJ45 plug type?

What is the current category of Ethernet cable most in use today?

What is the down side to Ethernet?

What are packet collisions?

What is the network that we use today that involves bundling a package with an address and sending that package when the wire is quiet?

In the Ethernet system of networking there is the inevitability of packet collisions when two machines send out a message at the same time. How do the machines go about resolving this issue?

Which type of network is most practical? You must explain/support your answer.

What is the type of network that most people use today? How does it work?

What is an IP (Internet Protocol) Address?

In a general sense, what can we think of an IP address as?

What is the function of an IP Address?

What is IPv4?

What is IPv6?

How many slots of numbers are in an IPv4 address?

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How many slots of numbers are in an IPv6 address?

How many bits are in an IPv4 address?

How many bits are in an IPv6 address?

How many unique addresses can exist on IPv4?

What numbers do UMass IP addresses begin with?

What manages multiple local IP addresses and moderates traffic?

What is the problem with IP Version 4 and what will IP Version 6 do to solve this?

When did we run out of unique IPv4 addresses?

What was exhausted on February 3, 2011, and what is being done about it?

What is the solution to the IPv4 exhaustion and how will it fix the problem?

Why people are not using IP version 6 to replace IP version 4 even though it already came out for a long time?

How did home routers help extend the life of IPv4?

What is the classful system and what are the 3 (main) classes within it?

Under Classful addressing, what class is never used?

What is the format of a Class-A addressing scheme?

List the first three classes of classful addressing and the sequences of each one.

What is the difference between a Class A and Class C addressing theme?

What class in the "Classful Addressing" routing technique would UMASS or similar institutions of its size use?

What class of IP address does the US government have?

What would be the most efficient classful addressing style to use for a large corporation?

What was the problem with the Classful system?

Explain the major flaw with classful addressing.

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The Class System (Including Class A,B and C) was replaced in 1993 by what?  
What does CIDR stand for?

What does Classless Inter-Domain Routing consist of in its address?

In the Classless Inter Domain Routing, how many bits identify the network, and how many identify the machine?

What's the difference between classful addressing and classless addressing in regards to IP address methods?

What's the difference between a house with 9 computers connected to hub versus 9 computers connected to a router?

What is the difference between a router and a hub?

Explain why a router can be smarter and save money, as opposed to a hub, when connecting multiple computers to the internet.

You are using a set up of 5 computers, a wireless router, and a modem. How many separate IP addresses does the internet provider "see"?

What is one difference between a router and a hub? a) Router is only WiFi, Hub is only ethernet b) The router has a "brain" allowing it to operate better than a hub c) The hub has a "brain" allowing it to operate better than a router d) There is no difference, terms are used interchangeably

What is the benefit of using a router?

What's the function of a router? How does it help with the lack of IP addresses problem?

What does NAT stand for, and how does it work?

What are the differences between 802.11b and 802.11g wireless specifications? Are they compatible with one another?

Name 3 types of 802.11 specifications, including the newest one which uses multiple radio frequencies simultaneously (not 802.16).

If someone bought a 802.11g router and a computer runs on a 802.11b Ethernet card, what will happen to the computer?

How many megabit/second does 802.11b capable of?

What is the difference between b/g/n wireless networks?

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Which of the following is NOT real? a) 802.11a b) 802.11b c) 802.11c d) 802.11g e) 802.11n

What is the standard radio frequency for a wireless signal?

What are 3 printing options when setting up a home network?

What is DNS?

What does DNS stand for?

What does the DNS act as?

Explain the DNS and what its main functions are.

What is one advantage and one disadvantage of DNS?

What is domain name system?

What is the biggest danger (to DNS)?

DNS is most similar to... a) phone book b) restaurant menu c) syllabus d) voicemail system

What is another name for a DNS or a Domain Name Server? A. Modem B Router C Phonebook D Map

What is a root server with respect to DNS?

What are the advantages and disadvantages of cache with respect to DNS?

What is a cache and cache poisoning?

Name a good way to avoid Cache Poisoning.

How can you avoid a "cache poisoning" situation?

You operate a small but profitable web business. What would happen if your site address became a victim of cache poisoning?

What does the acronym TTL mean and explain why it is important for cached IPs to have TTL.

What is a TTL, or "time to live," and why is it important? What two examples of information with TTL have we discussed this semester?



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**EMAIL**

What did Professor Verts compare an email to, and why?

What does the term "phishing" mean?

What is a phishing scam?

How do you identify phishing?

What steps can be taken to control phishing?

How do you avoid phishing?

What are the signs to look for in a phishing email?

How can you prevent yourself from falling for a scam email or phishing scam?

How do you know if an email or letter is a scam?

How private is e-mail as a form of communication?

E-mail is the most private way to send a message A True B False

Why is e-mail considered not private?

Why is email unsafe?

Why should you never put private information that you don't want others to know on email?

True or False. A reputable site will directly ask for personal info.

What percentage of email sent today is spam?

What is the best analogy in which to compare email? and Why?

What is a Nigerian scam letter?

Why is there so much spam in email?

Should your mom send your social security number via email? Why or why not?

What scams emails are most convincing and why?

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Why is email-based phishing and spam so prevalent?

What are two things you should be careful about when checking email?

Where does term for e-mail "spam" derive from?

Where did the computer term "spam" originate?

Which of the following is NOT an indicator that an e-mail from "Ebay" may be from someone trying to phish you? A. It is not well-written B. It gives a non-existing date such as 2/29 on a non leap year C. They are trying to sell you something D. The website address says registration101.ebay.com

True or False: Spam mail is costly to generate

What types of email attachments can contain malware? What types are universally safe?

What are some ways an individual can tell if they have received a spam email?

What percent of all email is spam and why is there so much of it?

What are four rules/suggestions for evaluating an email as SPAM?

What is the main reason that spam has gained popularity over the recent years?

Differentiate Spam and spam. How much of the non-meat product occupies all e-mail?

Junk emails are known to be called spam. How did that come about? What is the first well known spam on the internet mail?

Is email private? If it is not, what is a possible way to make the contents more secure?

Is everything on the internet safe? What about e-mail? Is it considered private because it is a personal account with a password?

What is a macro and what are the repercussions?

Back in the 1990's, what was a danger with macros and Email attachments?

**THE WEB**

Who first proposed the framework for the World Wide Web and when was this done?

What was the first graphical browser and when was it created?

What do http and HTML stand for?

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www.cs.umass.edu is called the...?

What does URL stand for?

Describe the components of a URL. Explain how these components fit together, use diagram if necessary

What are five parts of a URL?

What is a big problem with URL/IP addresses?

In a URL the "http://" represents what?

The \_\_\_\_\_ allows us to map URLs onto IP Addresses.

What is archive.org?

How does a search engine such as Google find websites?

What are the programs called that "walk" the links in web pages, often used by search engines

Name the program that "walks" the links on web pages.

What is a web crawler or a web spider?

What is the purpose of a web crawler/spider?

What can web crawlers find?

What do sites like Google use to index web pages and how do they work?

What mode and method do search engines such as Google use to identify URLs?

\_\_\_\_\_ are programs that travel through links on webpages, indexing the web page by page.

Please list all of the parts of the following web address:  
<http://www.cs.umass.edu/~verts/compsci20/compsci120.html>

Break down and name the various pieces of the following web address:  
<http://www.cs.umass.edu/~verts/compsci120/Midterm1.html>

On the following web address label the protocol, host address, username, default folder, and actual folder being grabbed:

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<http://www.umass.edu/~verts/cmpsi120/cmpsi120.html>

In the following web address, what is the path?  
<http://www.cs.umass.edu/~verts/cmpsi120/>

What is the "host address" in this URL?  
<http://www.cs.umass.edu/~verts/cmpsi120/Midterm1.html>

What will the URL below render in a browser?  
<http://www.briantino.com/spring2011/grad/family.jpg>

Give an example of a URL that specifies the file "cmpsi120.html".

The \_\_\_\_\_ maps the URLs onto IP Addresses.

Will an IP address work in place of a host address in a URL?

List 5 protocols that can be used in a URL.

What does "http" stand for? Are there any others of this type?

What does a URL consist of?

What are four things to look for when deciphering a valid website address?

True or False. HTTP (hypertext transfer protocol) is the only protocol used on the web today.

Why must you be careful when putting something up on the web, even if it is only online for a short time?

**BROWSERS**

What are cookies?

What are the advantages and disadvantages of cookies?

Why do websites use cookies?

What are the three security options that the computer will allow you to use with cookies?

A \_\_\_\_\_ is a piece of information that a website stores on your computer

Can cookies be malicious?

Can you get a virus from a cookie?

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How often does Dr. Bill clean up his cookies according to his lecture??

Please describe what a cookie is, its purpose, and how to personalize how it affects your computer.

What is an example of a website that uses cookie and what does it use them for?

What are the similarities and differences of CamWatcher vs. a Web Browser?

What is a browser cache? (Distinct from a DNS cache.)

**HTML**

What is the color code for yellow?

Create a hexadecimal color code from: Red=15, Green=237, Blue=202

What is an “entity”?

When using html why is the anchor tag so important?

What's the simplest way to create a webpage?

If you wanted your header to say Welcome, what code would you type into your text document?

Write a simple personal webpage with text and a hyperlink

What kind of file do you need to make the simplest webpage?

Properly tag the following sentence to make it bold and italicized in HTML:

The cat is black.

Which Heading code is correct?

A) <H1>Welcome</H1>

B) <H1>  
Welcome  
</H1>

C) Both can be used

What does <B>text</B> do to text?

What is the correct way to bold and italic words in a web page?

Act like you are writing a web page in a text editor like Notepad. The title of the webpage

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should be CMPSCI 120 Midterm #1. The body should read, "I think everyone in CMPSCI 120 should get an A on this exam please!" Please bold the body. Add a blue background color for the web page. Also add a link to the CMPSCI120 website (<http://www.cs.umass.edu/~verts/cmpsi120/cmpsi120.html>) with the words "Click Here to see Grades!"

Create a generic web page with the Title, "My Web Page" and Body, "Welcome!" using HTML format:

Which of the following is NOT correct? a) `<HTML> <BODY> This is comp sci </BODY> </HTML>` b) `<HTML> <BODY> <BR> This is comp sci <BR> </BODY> </HTML>` c) `<HTML> <BODY> <BR> This is comp sci </BR> </BODY> </HTML>` d) `<HTML> <BODY> <B><I> This is comp sci </I></B> </BODY> </HTML>`

List three things that do not affect the visual output when typing HTML tags.

When designing a web page using windows notepad, it is important to make sure you space each line properly so that there is not too much white space. True/False.

What is the importance of white space when creating a web page from scratch?

Make a website that can be opened from a file on your computer with the Title : "Welcome to My Website" and the Body: "This is Question #5"