

Hand in a stapled, printed copy with your answers.

Homework: /SI110/The Cyber Battlefield/Networks & Protocols 1

1. Read the class notes first, then fill in the blanks:

A computer (in the most general sense) connected to the internet is called a _____. When communicating on the internet (without DNS name resolution), the _____ to which data is to be sent is identified by its _____. The data sent across the internet is broken up into small chunks which, together with the address of the recipient, forms what is called a _____.

2. The number (represented in hex)a8010fdda1672da832eff3c23b852011 is the address of a host. Is it an IPv4 address or an IPv6 address? Justify!
(HINT: read the notes and make sure you understand the difference between IPv4 addresses and IPv6 addresses!)

3. When we refer to "host 131.122.89.220", what do the four dot-separated numbers represent? Circle the letter(s) of the correct answer(s):

- (a) the contents of the four bits that make up the host's IP address.
- (b) the contents of the four bytes that make up the host's IP address.
- (c) the ASCII encodings of the four characters comprising the host's name.
- (d) the ASCII encodings of the digits comprising the host's IP address.

4. Find a website not mentioned in the class notes. Tell me the domain name of the webserver and its IP address. Hint: Use nslookup!

5. When you enter the URL **http://www.usafa.af.mil/news/index.asp** into your browser's address bar, what is the first server that gets contacted *before* the browser actually sends a request to the usafa.mil webserver?

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Technical Foundations

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Alpha _____

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6. What organization's webserver has IP address 67.59.175.99 ? How did you find that out?

7. Domain names are hierarchical. What part of rona's domain name is common to the domain names of all hosts at the Academy?

8. What is the function of the tool "traceroute"?

9. The course notes for this lesson include a few xkcd comics. The one with the campfire refers to the "192.168/16 block" of IP addresses. Explain what's special with addresses of the form 192.168.*.*