Network Review With Professor Messer URL: http://www.professormesser.com/

+ Questions: Protocols and Addresses

URL: http://www.professormesser.com/free-a-plus-training/220-701/protocols-and-addresses/

- 1. In a networking context, what is a protocol?
 - a. A very structured language that devices on a network use to communicate
- 2. What is the major protocol used on the Internet?
 - a. TCP/IP
- **3.** At what OSI layer does IP operate? a. Layer 3, Network
- 4. What three pieces of information do you need to configure TCP/IP?
 - a. IP Address, Subnet Mask, Default gateway
- 5. Is the IP address a single address?
 - a. No, it consists of 4 octets, a series of numbers that represent the Subnet address and the host address
- 6. When was classful addressing last used?
 - a. 1993

7. What are the three major classes of addresses?

- a. Class A: 225.0.0.0
- b. Class B: 225.225.0.0
- c. Class C: 225.225.225.0
- 8. What is DNS? What does it do?
 - a. Domain Name Service maps domain names to IP Addresses

9. What is DHCP? What does it do?

- a. Dynamic Host Control Protocol, automatically sets TCP/IP settings for devices on a network
- **10. Which proprietary Microsoft protocol was used in early version of MS Windows?** a. NetBEUI
- 11. Which protocol is used to resolve a fully qualified domain name to an IP Address?
 - a. DNS

+ Questions: Common Ports

URL: http://www.professormesser.com/free-a-plus-training/220-701/common-ports/

- 1. In a TCP/IP context, what is a port?
 - a. A window or opening on a server/device that allows for connection to enter to request a specific service (If you need a web server, you'll use port 80)

2. What is a non-ephemeral port?

- a. Permanent port numbers expected on a server-standard port numbers for services
- 3. What is meant by the term "well known" port?
 - a. They are simply ports that are well known around the world to be running specific services

4. Compare and contrast TCP and UDP ports.

a. Both use port ranges between 0-65535, but they are completely different services/protocols

5. What port does the DNS utilize?

- a. UDP/53
- 6. What port does HTTPS protocol utilize?
 - a. TCP/443

7. What is the protocol SMTP and what port does it use?

a. Simple Mail Transfer Protocol is used for sending mail messages on port TCP/25

+ **Questions**: Networking Technologies

URL: http://www.professormesser.com/free-a-plus-training/220-701/network-technologies/

- 1. How does Professor Messer define a network?
 - a. A way to connect different devices together, and can be done through a variety of ways
- 2. What is a network Topology? Who makes Network Topology Standards?
 - a. Topologies determine how networks are arranged and how to communicate. These standards are made by the IEEE—Institute of Electrical and Electronic Engineers
- 3. What is the most popular form of consumer networking?
 - a. Wireless networking (802.11)
- 4. What is the term that describes a network that can communicate in both directions at the same time?

a. Full Duplex

- 5. What differentiates a LAN from a WAN?
 - a. A LAN is typically used to connect devices in a small area or office so they can communicate with all devices on the network. A WAN connects multiple LANs together through a third party (AT&T Internet).

+ Questions: IPv4 and IPv6

URL: http://www.professormesser.com/free-a-plus-training/a-plus-videos/ipv4-and-ipv6-2/

- 1. What is the most widely used protocol in the world?
 - a. IPv4
- 2. Compare and contrast the lengths of IPv4 and IPv6.
 - a. IPv4 is a 32 bit address with the capacity of 4.3 billion address, where IPv6 is a 128 bit address with the capacity to surpass IPv4's capacity many times over
- 3. Is this a valid IPv4 address: 192.1.325.12?
 - a. No, 255 is the highest decimal value for each byte
- 4. Is this a valid IPv6 address: a::b::c?
 - a. No, there cannot be a second colon after a
- + Questions: Networking Cabling and Connectors

URL: http://www.professormesser.com/free-a-plus-training/220-701/network-technologies/

- 1. What is the Alliance of Trade Associations that makes network cabling standards?
 - a. Telecommunication Industry Association (TIA)
- 2. What is the Commercial Building Telecommunications Cabling Standard that we use for cabling? a. ANSI/TIA/EIA-568
- 3. What is the most common physical type of cabling?
 - a. Twisted Pair Copper Cabling
- 4. What category of copper cable supports 100Mbits Ethernet?
 - a. Cat5 Ethernet
- What category of copper cable supports 10Gbits Ethernet through 55 meters?
 a. Cat6 Ethernet
- 6. What is plenum rated cable?

a. Cable especially designed to withstand intense heat and cold condition, doesn't burn easily

- 7. What type of cable did Ethernet originally use?
 - a. Coaxial cables
- 8. What is the type of cable that is most suited for sending signals a long distance?a. Fiber Optic Cables
- 9. If you were connecting machines within a data center, what type of fiber would you likely to use?a. Multimode Fiber
- 10. If you were connecting two remote buildings, what type of fiber would you likely use?
 - a. Single-mode Fiber

11. What type of jack would you use for Ethernet?

- a. RJ-45
- 12. What type of jack would a phone use?
 - a. RJ-11

+ Questions: Network Types

URL: http://www.professormesser.com/free-a-plus-training/220-701/network-types/

- 1. What high speed type of network runs over telephone lines?
 - a. DSL—digital subscriber line
- 2. What type of high speed network runs over coax cable?a. Cable Modem Networks, using DOCSIS
- 3. Which of the popular type of home high speed networks utilizes non-terrestrial networks that typically have a high latency?
 - a. Satellite networks
- 4. What was Bluetooth originally designed to replace? a. Replace slow-speed wires
- 5. What type of network would Bluetooth create?
 - a. PAN, personal area network

+ Questions: Wireless Networking

URL: http://www.professormesser.com/free-a-plus-training/220-701/wireless-networking/

- 1. What is the IEEE family of standards for wireless networking? a. 802.11
- 2. How do the different members of the 802.11 family differ?a. Primary differences are the speeds and distances which they can broadcast
- 3. Which 802.11 standard utilizes MIMO?
 - a. 802.11n
- **4.** Which 802.11 standard represents an improvement, and backwards compatibility with 802.11b? a. 802.11g
- 5. What was the original encryption utilized by 802.11? a. WEP
- 6. What type of encryption was created to improve on WEP but utilize the same hardware? a. WPA
- 7. What type of wireless encryption is based on the Advanced Encryption Standard (AES)? a. WPA2
- 8. In wireless networking, what is a SSID?
 - a. Service Set Identified, the name assigned to a wireless network
- 9. Disabling SSID broadcast is an important security configuration.
 - a. If you don't want your WAP to be discovered, you can disable the SSID from broadcasting
- 10. What is the general security term used to describe the disabling of SSID broadcast?a. Security through obscurity
- 11. Can MAC addresses be spoofed?
 - a. Yes, MAC addresses are not encrypted, can be obtained through packet sniffing
- 12. What wireless networking standards support speeds up to 600 megabits per second?
 - a. 802.11n