**Module 4 / Unit 1 Networking Concepts**

**1. What is a WAN?**

A Wide Area Network (WAN) connects sites in different geographic locations. WANs usually make use of telecommunications and service provider networks rather than being directly operated by the network administrators.

**2. What is a packet made up of?**

A packet consists of a number of fields contained within a header section plus a payload. The payload could be a packet from the protocol layer above.

**3. What are the key features of a packet switching network?**

Nodes within the network can perform a forwarding function, allowing a packet to utilize any available path through the network. This makes the network robust against link failures. If is beneficial for the network to use small packets that are easy to re-send.

**4. What protocol is usually used to provide logical addressing on networks?**

Internet Protocol (IP).

**5. What type of address identifies a network interface in the context of the local**

**network segment only?**

A Media Access Control (MAC) address.

**6. What type of device is used to transfer packets between different networks?**

A router.

**7. Which protocol allows people to use names/labels to address network resources**

**rather than numeric addresses?**

Domain Name System (DNS).

**8. Which of the following parts of a web address is usually depends on a name**

**resolution service: protocol type, host location, file path?**

The host location is usually represented by a Fully Qualified Domain Name (FQDN), such as www.comptia.org, resolved to a numeric IP address by DNS.

**9. What does HTTP stand for?**

HyperText Transfer Protocol (HTTP).

**10. Which email protocol(s) are used to download messages from a mail server?**

Either Post Office Protocol (POP) or Internet Message Access Protocol (IMAP).

#### **Module 4 / Unit 2 Connecting to a Network Objectives**

**1. What device is used to connect computers together in an Ethernet network?**

A switch.

**2. What is the difference between a modem and a router?**

A modem creates a serial link between two computers over some sort of long distance media. It operates at the data link layer. A router makes forwarding decisions between logical networks. It does not need to take account of the framing and transmission details—those are the responsibility of the modem (or of an Ethernet switch or wireless access point). It just needs to know that a particular logical network can be reached over one of its interfaces. Most SOHO devices pack all these functions into a single appliance but it is important to appreciate the differences between the functions.

**3. Can you list at least four Internet access methods?**

Digital Subscriber Line (DSL), cable/Hybrid Fiber Coax, Fiber to the Curb (FTTC), satellite, and cellular radio.

**4. What is the latest Wi-Fi standard and which frequency band(s) does it use?**

IEEE 802.11ac works in the 5 GHz band. Most 802.11ac access points do have 2.4 GHz radios but they use them to support legacy standards.

**5. What information do you need to configure a wireless connection manually?**

Service Set ID (SSID)/network name, encryption type, and authentication information (a preshared key if not using enterprise authentication).

**6. What is the risk of using a free Wi-Fi network to make an order from an online shop?**

Data on an open network may be intercepted by the person running the network or by other computers connected to the network. You need to ensure that the online store uses a secure (HTTPS) connection.

**7. What does attenuation mean?**

Attenuation describes the loss of strength of a signal the farther it has to travel. Attenuation sets the distance limitations on different network media types.

**Review Questions / Module 4 / Unit 3 / Secure Web Browsing**

**1) If you use an open network, what email configuration setting should you ensure is** **enabled?**

a) Enable Secure Sockets Layer/Transport Layer Security (SSL/TLS) encryption to protect the account password.

**2) You have installed a screensaver application. Later, after updating your anti-virus software,** **a malicious program is found. This appears to have infected your system at the same time as** **the screensaver was installed. What class of malware is this?**

a) Trojan Horse.

**3) You want to use a website that hosts training modules in a custom media format. What type of add-on would you need to install to play this media?**

a) You would need to install a type of browser add-on called a plugin. Plug-ins should be restricted to interacting with the media object on the web page.

**4) What type of file might a website use to track whether you have visited it before?**

a) Cookie.

**5) True or false? Browser pop-up windows are definite symptoms of virus infection.**

a) False—these could be a result of adware or part of the design of a particular site (admittedly, not a site you'd want to visit often).

**6) You are using a computer in an Internet cafe. What should you do at the end of the session?**

a) Clear the browser cache or use the workstation's browser private/incognito browsing mode.

**7) What identifies a website as using the secure HTTPS protocol with a valid certificate?**

a) The URL shows the "https://" protocol and the browser shows a padlock icon. For sites that have passed special validation regimes, the address bar will be shown in green. If a site uses https but the certificate is not trusted by the browser, an alert is displayed.

**8) You want to restrict access to a computer on your network to a single Internet host running a particular application. What two things do you need to configure in your firewall's access control list?**

1. The IP address of the host and the port number of the application.

**Review Questions / Module 4 / Unit 4 / Using Shared Storage**

**1) True or false? A hard disk connected to a computer via a USB port could**

**be described as "Direct Attached Storage."**

a) True.

**2) What type of connection would a NAS device use?**

a) Network Attached Storage (NAS) means using either a cabled

(Ethernet) or Wi-Fi link to the network.

**3) Which admin tool or screen would you use to configure a Windows**

**computer to join a domain?**

a) Via the System applet in Control Panel or via the Settings app

(Access work or school).

**4) True or false? Any version or edition of Windows can be used to share**

**files with other users.**

a) True—non-server editions are restricted in the number of

simultaneous clients though.

**5) How could you access a network folder called DATA on a network**

**server called TOWER1 using the Explorer address bar?**

a) By entering the UNC path: \\TOWER1\DATA

**6) What is a mapped drive?**

a) A folder shared by a network server that the client connects to via

a drive letter that redirects to the network share name

(\\Server\Folder).

**7) What protocol would be used to provide encrypted file downloads from**

**a web server?**

a) HTTPS—HyperText Transfer Protocol with Secure Sockets

Layer/Transport Layer Security (SSL/TLS).

**8) You have made a backup of system data using a removable hard disk.**

**What should you do next?**

a) Store the disk in a secure location—preferably in a different place

to the PC.

##### Module 4 / Unit 5 / Using Mobile Devices

**1) What type of gesture is typically used for zooming on a touchscreen?**

a) Pinch.

**2) What is the purpose of an accelerometer, as fitted in a mobile device?**

a) It is one of the components that detects how the user is moving the device around. This is used to set the screen orientation and as an advanced control mechanism.

**3) What feature allows data to be removed from a device if is lost or stolen?**

a) This is referred to as remote wipe or sometimes as a kill switch.

**4) True or false? A smartphone cannot join a Wi-Fi network if the SSID is not being broadcast.**

a) False—the SSID (or network name) can be entered manually, as with a computer.

**5) What is "airplane mode?**

a) A quick toggle for disabling all wireless functionality (cellular, WiFi, and Bluetooth).