

Chapter 01 Introduction to Networking

1. Hennessy is studying for the Network+ certification exam. The question asked is, "What is the definition of a network?" How does Hennessy answer?

- a. A network is a group of devices.
- b. A network is a group of computers and other devices (such as printers) that are connected by some type of transmission media.
- c. A network is comprised of the wiring that flows throughout an office space or building.
- d. A network is computer hardware working together.

ANSWER:

b

2. David is new at his networking job, and his supervisor quizzes him on the differences between physical and logical network topology. What is the correct answer?

- a. Physical computer topology refers to how data is transmitted between devices in a network. Logical topology deals with the actual layout of devices and cables.
- b. Peer-to-peer network topology refers to how data is transmitted between devices in a network. Star topology deals with the actual layout of devices and cables.
- c. Logical network topology refers to how data is transmitted between devices in a network. Physical topology deals with the actual layout of devices and cables.
- d. Bus network topology refers to how data is transmitted between devices in a network. Ring topology deals with the actual layout of devices and cables.

ANSWER:

c

3. Connie is configuring the network for a new restaurant that her company is about to open. She has five desktop computers, four LaserJet printers, and three laptops. She plans on using a peer-to-peer environment. What makes peer-to-peer suitable for Connie's restaurant? Choose all that apply.

- a. Peer-to-peer is scalable, which means, as the network grows, it is easy to add and change elements.
- b. The computers on a peer-to-peer network can share folders and files without the need for an expensive server.
- c. A peer-to-peer network is simple to configure and requires little technical expertise.
- d. A peer-to-peer network is practical for connecting more than a few computers, since it is not time-consuming to manage network resources.

ANSWER:

b, c

4. Irene enjoys working with a client-server architecture. Although it is typically more complex in design and maintenance than its peer-to-peer counterpart, a client-server architecture offers many advantages. What are some of the benefits of working in a client-server environment? Choose all that apply.

- a. User accounts and passwords to the network are assigned in one place.
- b. A central server makes upgrading the network cheaper.
- c. Problems on the network can be monitored, diagnosed, and often fixed from one location.
- d. Access to multiple shared resources (such as data files or printers) can be centrally granted to individual users or groups of users.

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ANSWER:

a, c, d

5. Emmi is her company's IT manager. Since her company is growing, she wants to switch from a peer-to-peer (P2P) networking architecture to a client-server architecture. The company has grown to 30 users, so why is it better for her to use a client-server architecture over peer-to-peer? Choose all that apply.

- a. Client-server users can sign on to the network from any computer and get access to the resources that Active Directory allows. This process is managed by AD DS (Active Directory Domain Services). Sharing files on a peer-to-peer network means creating 30 user accounts to share documents and then set up each workstation with the same user accounts.
- b. In a client-server network, an administrator can ensure only authorized users can access the network.
- c. In a client-server network, an administrator can control what files a user can open, read, or edit.
- d. In a client-server network, servers only need as much memory as the clients since their workload is the same.

ANSWER:

a, b, c

6. Protocols are rules used between networked devices for communication.

- a. True
- b. False

ANSWER:

a

7. Jackson is currently preparing for his Network+ certification exam and has encountered a question regarding the communication of computers on a network via common protocols. The question asks about the two primary network protocols that are used for communication. What are those primary protocols?

- a. SSL/TLS
- b. SMTP/POP3
- c. TCP/IP
- d. TCP/UDP

ANSWER:

c

8. Larkyn is in the process of setting up his email account and is being prompted for his SMTP server address. What is the SMTP server address for?

- a. The SMTP server address downloads messages to Larkin's computer.
- b. The SMTP server address encrypts email as it sends it.
- c. The SMTP server address decrypts email as it is received.
- d. The SMTP server address is used whenever Larkin's sends email.

ANSWER:

d

9. Mace is in the process of setting up his email account and is being prompted for his POP3 server address. What does the POP3 server do when email is sent to it?

- a. The POP3 server is responsible for receiving email on a mail server. When Mace logs on, the POP3

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server will download the email to his email client, such as Outlook, and then typically remove it from the server.

- b. The POP3 server is responsible for sending emails to the mail server when Mace sends email.
- c. The POP3 server is responsible for receiving email on the mail server. When Mace logs on, the POP3 server will download the email to Mace's client and keep it on the email server.
- d. The POP3 server will encrypt email as it is sent from Mace's client.

ANSWER:

a

10. When using IMAP4, email is downloaded to the client computer and then usually deleted from the server. In contrast, with POP3, the client application manages the email while it remains on the server, making it ideal for accessing email from multiple devices.

- a. True
- b. False

ANSWER:

b

11. DNS (Domain Name System) helps clients find web servers over a network such as the Internet. It translates domain names (e.g., www.example.com) into IP addresses (e.g., 192.0.2.1) that computers use to communicate with each other over a network.

- a. True
- b. False

ANSWER:

a

12. Katherine goes to her banking website to transfer money between her checking and savings accounts. Before she makes a transaction, she looks at the top left of her browser's navigation bar and sees that the website is using HTTP and not HTTPS. What should Kathrine do?

- a. Continue with her transaction; it doesn't matter if the website is secure as she has virus protection.
- b. Try another browser to see if the website is secure through the other browser.
- c. Leave the website since HTTPS is not secure.
- d. Call her bank to complain about the website.

ANSWER:

c

13. Gael wants to remote into a client's computer using Telnet, but the client refuses. Why is the client refusing to allow Gael to use Telnet?

- a. Telnet is an old protocol and is no longer used.
- b. A user license for Telnet is required.
- c. Telnet is not an encrypted application. Therefore, transmissions can be subject to spying.
- d. Telnet has been known to have multiple vulnerabilities that make it susceptible to attack.

ANSWER:

c

14. Hal is deciding whether to use the switch or hub in his network. So, he asks his best friend, a network

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technician, for advice. Hal asks his friend, "What's the main difference between a switch and a hub?" How does his friend answer?

- a. There's no difference between the two except switches move data faster than hubs.
- b. A hub broadcasts incoming data to all ports, while a switch directs incoming data to the port(s) that will send it to its intended destination within the local network.
- c. A switch broadcasts incoming data to all ports, while a hub directs incoming data to the port(s) that will send it to its intended destination within the local network.
- d. Hubs can only be used in a star topology, whereas switches can only be used in a mesh topology.

ANSWER:

b

15. Jacoby arranged five computers and two network-capable Laserjet printers in his office and connected them to a switch. What is this physical topology called?

- a. ring topology
- b. mesh topology
- c. star topology
- d. hybrid topology

ANSWER:

c

16. Jenney wants to connect all her devices to one another without a central device, creating a fully interconnected network. What is this physical topology called?

- a. ring topology
- b. hybrid topology
- c. star topology
- d. mesh topology

ANSWER:

d

17. Which of the following devices have NICs (network interface cards) either on board or attached to an expansion slot not including wireless adapters? Choose all that apply.

- a. desktop computer
- b. printer
- c. standalone scanner
- d. router

ANSWER:

a, b, d

18. Kenneth toured the new building's telecom room and saw a dozen switches connected with a fiber connection on one port and the rest of the ports connected to Cat 8 cable. What is the fiber conduit called?

- a. spine
- b. wide area network
- c. campus area network

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- d. backbone

ANSWER:

d

19. Tia is using a smartwatch, a Bluetooth headset, and carrying her phone. What type of network is this an example of?

- a. WAN (wide area network)
- b. PAN (personal area network)
- c. BAN (body area network)
- d. WLAN (wireless local area network)

ANSWER:

b

20. Maddox is setting up two separate networks on different floors of a building for the sales and marketing departments. Although the networks are completely separate, they need to be able to communicate with each other. Which device should be used so the networks can communicate?

- a. switch
- b. hub
- c. router
- d. node

ANSWER:

c

21. Nan is the IT manager for a company that's expanding into new offices. She has three business units in different offices: sales, engineering, and accounting. She wants to keep the networks separate but also wants the devices on each network to communicate with each other in the same office. How should the office be set up?

- a. A router with three routing ports serving the three offices and a switch for the hosts.
- b. A switch with three switching ports serving the three offices and a router for the hosts.
- c. Four switches, one for each office and one to connect the offices.
- d. Four routers, one for each office and one to connect the offices.

ANSWER:

a

22. Xander is the IT manager for SimCo, which has offices located in both San Francisco and New York. Today, he is planning to test a new employee on their knowledge of how the network connects between the two offices. This is a standard connection; no encryption is involved. So, new hire, what is involved in making the connections between the San Francisco and New York offices?

- a. San Francisco LAN-New York LAN
- b. San Francisco WAN-ISP-New York WAN
- c. San Francisco-ISP-New York
- d. San Francisco LAN-WAN/ISP/WAN-New York LAN

ANSWER:

d

23. Erin was studying for her Network+ certification exam when she encountered this question, "Which OSI

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model layer is responsible for reformatting, compressing and encrypting data in a way that the application on the receiving end can read?" What is Erin's answer?

- a. Session Layer (Layer 5)
- b. Presentation Layer (Layer 6)
- c. Transportation Layer (Layer 4)
- d. Network Layer (Layer 3)

ANSWER:

b

24. Which layer of the OSI model describes how data between applications is synced and recovered if messages don't arrive intact at the receiving application?

- a. Application (Layer 7)
- b. Presentation (Layer 6)
- c. Session (Layer 5)
- d. Transport (Layer 4)

ANSWER:

c

25. Melanie is currently preparing for her Network+ certification exam, and she has been presented with the following question, "What are the primary transport layer protocols, and what is their function in transporting application layer payloads from one application to another?" How does Melanie answer? Choose all that apply.

- a. SNMP (Simple Network Management Protocol) programs, which monitor and gather information about network traffic and can alert network administrators about adverse conditions that need attention.
- b. TCP (Transmission Control Protocol) is a connection-oriented protocol used by apps like web browsers and email. It ensures data delivery by making a connection with the end host, checking if the data is received, and resending it if required.
- c. The principal protocol is the IP (Internet Protocol). IP adds its own network layer header to the segment or datagram.
- d. UDP (User Datagram Protocol) is a connectionless protocol that doesn't guarantee delivery and is used for broadcasting, streaming video/audio over the web, and monitoring network traffic where guaranteed delivery is not as important as fast transmission. UDP is called a connectionless protocol or best-effort protocol and is also referred to as the fire-and-forget protocol.

ANSWER:

b, d

26. Idris has recently started as an intern at a network outsourcing firm. His supervisor is conducting a quiz for all the new interns to test their understanding of networking and the OSI model. One of the questions posed to the interns is: "Which OSI layer is responsible for transmitting messages from one node to another until they reach their intended destination host?" How should Idris answer?

- a. the physical layer (Layer 1)
- b. the data link layer (Layer 2)
- c. the transport layer (Layer 4)

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- d. the network layer (Layer 3)

ANSWER:

d

27. An IP address is an address assigned to each node on a network, which the network layer uses to uniquely identify them across multiple networks.

- a. True
b. False

ANSWER:

a

28. Emei has recently been hired as a technical assistant by a major network component manufacturer. She will be part of a quality control team responsible for checking network interface cards (NICs) for any damage or defects. However, before starting her actual work, her supervisor has asked her a basic question related to NICs. The question is: "On which layer or layers does the NIC operate, and what are some examples of the protocols that a NIC uses for communication?" Choose all that apply.

- a. NICs work at the physical layer (Layer 1)
b. NICs work at the physical layer (Layer 1) and the data link layer (Layer 2)
c. Ethernet protocol
d. Wi-Fi protocol

ANSWER:

b, c, d

29. A physical address is embedded on every network adapter on the globe. This is called a NAC (Network Access Control) address.

- a. True
b. False

ANSWER:

b

30. Diana is seeking ways to effectively manage her network. There are protocols available that allow network managers to check, monitor, and gather information about network traffic. These protocols can alert network administrators about any adverse conditions that require attention to maintain the health of their network and host devices without relying on third-party software. Which protocol offers this capability?

- a. API (application programming interface)
b. SNMP (Simple Network Management Protocol)
c. ICMP (Internet Control Message Protocol)
d. ARP (Address Resolution Protocol)

ANSWER:

b

31. Darwin is planning to set up five different networks for five different offices for the same company and in the same building, all of which will be connected to a single ISP. Each network will be confined to a single large office, which will have five computers and a LaserJet printer. All devices within the individual offices will be interconnected. Darwin needs to know how many NICs in the router and how many switches will be needed

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for his plan to work? For the time being, there will be no communication between networks.

- a. Darwin needs four NICs for the router. One for every two networks and one for the ISP connection, and he needs five switches one port on each switch will be dedicated to the NIC on the router.
- b. Darwin needs two NICs for the router. One for a network port and one for the ISP connection, and he needs six switches, one for each office and as a central switch each office will connect to. One port on the switch will be dedicated to the NIC on the router.
- c. Darwin needs two NICs for the router. One for the network and one for the ISP connection, and he can use one 35 port switch to connect all of the devices in all of the offices.
- d. Darwin needs six NICs for the router. One for each network and one for the ISP connection, and he needs five switches; one port on each switch will be dedicated to the NIC on the router.

ANSWER:

d

32. Adrian is a new employee and as per company policy, he must undergo emergency training for the building, regardless of the company he works for. During the training, he was shown around the building and saw the fire sprinklers and fire extinguishers. He was also shown the gas system suppression system and saw how it is activated. Later, when he reached his department, they discussed targeted fire suppression and detection methods. They explained how they suppress fire without damaging sensitive electronics. Adrian is then given a test about the emergency systems. The question asked was "At what level to you find gas suppression systems?" How did Adrian answer?

- a. building level
- b. room level
- c. rack level
- d. ground level

ANSWER:

b

33. Lani just started working at a Network Operations Center (NOC) and must follow certain guidelines whenever she uses tools in her job. Which government agency provides these guidelines?

- a. EPA
- b. NHTSA
- c. OSHA
- d. FDA

ANSWER:

c

34. Anwar was working on his desktop computer and left it on while he worked on it. Suddenly, the screen went blank, and the computer restarted. Just before this happened, Anwar felt a slight shock. What might have caused the computer to restart? Choose all that apply.

- a. He was working on his computer while it was turned on and the electronics inside were generating static electricity.
- b. He accidentally hit the reset switch, so the computer rebooted.
- c. He accidentally jiggled the power cord, so the power momentarily went off and on.

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- d. He discharged static electricity onto the motherboard because he wasn't grounded, which shocked the board and caused it to reboot.

ANSWER:

a, d

35. Willanda had a passion for working with computers. In fact, she loved it so much that she would occasionally build them from scratch for her friends. One of her golden rules was to never work without an ESD wrist strap, which protects the computer from static electricity. However, one day a friend called her in need of help because a memory chip had died. Willanda went to her friend's house to fix it, but she realized that she had forgotten her ESD wrist strap at home. Despite this, she was still determined to complete the task. She proceeded very carefully, taking all necessary precautions to avoid any potential damage to the computer. How was Willanda able to accomplish her task without damaging the computer or injuring herself even though she did not have the wrist strap?

- a. She wore rubber gloves.
- b. She worked on a wooden workbench.
- c. She took out the power supply.
- d. She unplugged the computer and grounded herself by touching the metal chassis and sometimes the power supply.

ANSWER:

d

36. As in life, just as a journey starts with a first step, in troubleshooting that journey starts with the very first question. To identify the problem and its symptoms, you first have to ask one simple but very important question. What is that question?

- a. What did you do?
- b. What happened?
- c. What has recently changed?
- d. Did you add or take anything off your computer?

ANSWER:

c

37. Francisco worked in a Network Operations Center (NOC) for a medium-sized business. Everything was working fine on Friday, but on Monday, he received some technical service tickets complaining about the Internet being down. He started investigating the issue by looking through the visitor logs. He knew that a cleaning crew comes once a week to clean the floors of the NOC and make sure there is no dust around the desks. He discovered that the cleaning crew had been inside the NOC on Saturday. Francisco then checked every rack and noticed that some cables were unplugged, which were connected to a router connected to the WAN. He plugged the cable back in, and the Internet came back online. What troubleshooting step was Francisco on?

- a. Establish a plan for resolving the problem.
- b. Test your theory to determine the cause.
- c. Identify the problem and its symptoms.
- d. Establish a theory of probable cause.

ANSWER:

d

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38. Orien has recently discovered that two ports on one of his company's managed Layer 3 switches are intermittently failing. Since all ports on the switch are already in use, replacing the switch would cause significant disruption to the majority of the office staff. Orien must adhere to the change management policy in place and develop a plan that will minimize any potential disruption to the staff. What troubleshooting step is Orien on?

- a. Implement the solution or escalate the problem.
- b. Establish a plan for resolving the problem.
- c. Document findings, actions, and outcomes.
- d. Test your theory to determine the cause.

ANSWER:

b

39. Warda just finished repairing a company desktop computer. There seemed to be a power supply issue. The user told Warda that sometimes the computer would shut down for no reason and occasionally they would hear strange noises coming from the power supply fan. Once there was a burning smell coming from the computer. So after hearing those symptoms, Warda replaced the power supply with a new, more powerful one. She then ran tests on the power supply through the CMOS utilities, and the problem disappeared. What troubleshooting step was she on?

- a. Document findings, actions, and outcomes.
- b. Establish a plan for resolving the problem.
- c. Implement the solution or escalate the problem.
- d. Verify functionality and implement preventive measures.

ANSWER:

d

40. Rayco just finished repairing a company laptop. There seemed to be a memory chip issue. Sometimes, while the user traveled with the laptop, the system would randomly crash and get a blue screen of death (BSOD), and occasionally the system became unstable or would sometimes lose data. This only happened when the laptop was traveling, such as in an airplane, or was just taken out of luggage after traveling. When the laptop was at the office, everything was fine. After the user explained the symptoms to Rayco, he believed he knew most likely what the problem was. So, he took apart the laptop and checked the memory modules. One of the chips was not all the way pressed into its slot. So, he pushed the chip back in its slot and checked the other chips; everything else was fine. Rayco then put the machine back together. What would be a good way for Rayco to test the laptop to see if he can get the same errors to happen again?

- a. Hand it back to the user and tell her it's fixed, and they can take it on their next trip.
- b. Handle it like you would if you were on a trip. Roll it over different terrain in a suitcase for a couple of days, put it in and take it out of the car, and then check it again for errors by using the onboard diagnostic utilities.
- c. Roll it around in luggage for an hour or two and maybe into the parking lot and then check it for errors.
- d. Shake it vigorously for a few minutes to see if that dislodges the memory chips.

ANSWER:

b

41. Isabel has been a part of her company's IT team for several years. During her tenure, she has added some

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unusual items to the company's knowledge base. Some of the following answers are actual data in the knowledge base. Can you guess which ones are real knowledge base material?

- a. LaserJet A only works with new paper; it jams if you try to use recycled paper.
- b. Inkjet printer B will not work on WiFi unless the SSID is on. It throws a cannot connect error message if the SSID is hidden.
- c. The blue cable is a straight through cable, and the red cable is cross-over cable.
- d. Alienware x14 R2 is from Dell Computer.

ANSWER:

a, b