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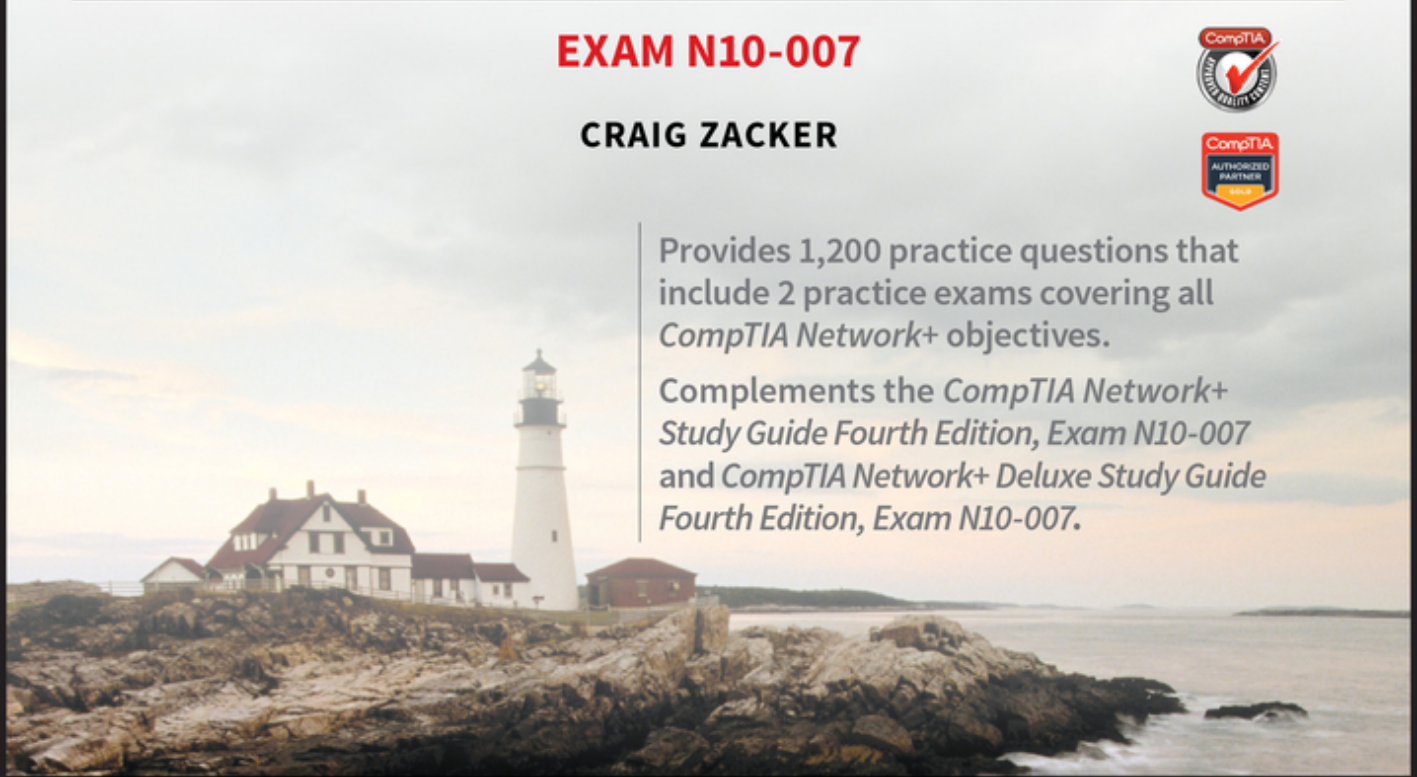
EXAM N10-007

CRAIG ZACKER



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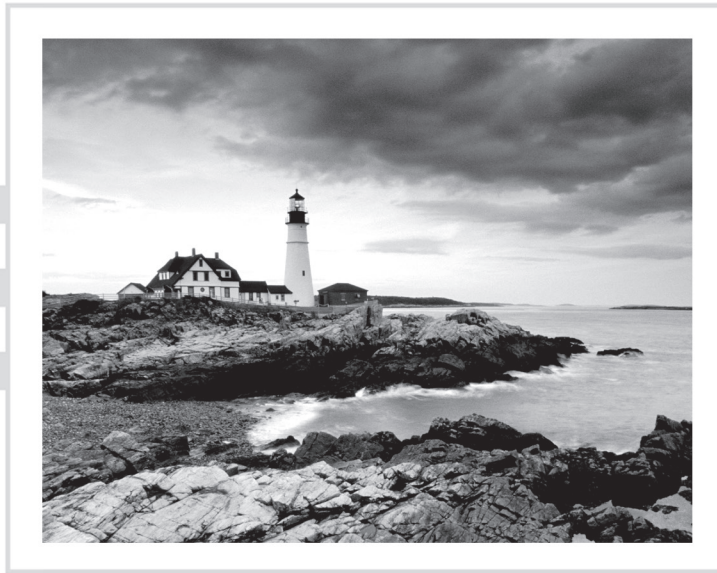
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Exam N10-007



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Craig Zacker is the author or co-author of dozens of books, manuals, articles, and websites on computer and networking topics. He has also been an English professor, a technical and copy editor, a network administrator, a webmaster, a corporate trainer, a technical support engineer, a minicomputer operator, a literature and philosophy student, a library clerk, a photographic darkroom technician, a shipping clerk, and a newspaper boy. He lives in a little house with his beautiful wife and a neurotic cat.

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Introduction

Welcome to *CompTIA Network+ Practice Tests: Exam N10-007*. This book gives you a focused, timesaving way to review your networking knowledge and prepare to pass the Computing Technology Industry Association (CompTIA) Network+ exam. The book combines realistic exam prep questions with detailed answers and two complete practice tests to help you become familiar with the types of questions that you will encounter on the Network+ exam. By reviewing the objectives and sample questions, you can focus on the specific skills that you need to improve before taking the exam.

How This Book Is Organized

The first five chapters of this book are based on the five objective domains published by CompTIA for the N10-007 Network+ exam. There are 200 questions for each objective domain, broken down into the individual subdomains and covering each of the suggested topics. The next two chapters each contain a 100-question practice test covering all of the objective domains. Once you have prepared each of the objective domains individually, you can take the practice tests to see how you will perform on the actual exam.

Interactive Online Learning Environment and Test Bank

The interactive online learning environment that accompanies *CompTIA Network+ Practice Tests: Exam N10-007* provides a test bank with study tools to help you prepare for the certification exam, and increase your chances of passing it the first time. The online test bank runs on multiple devices. The test bank includes the following:

Chapter Tests The questions in the chapters align with objectives in the exam outline. Use these questions to test your knowledge.

Practice Exams Two practice exams are provided to prepare you for the type of questions to expect on the actual exam.



Go to <http://www.wiley.com/go/netplustestprep> to register and gain access to this interactive online learning environment and test bank with study tools.

Who Should Read This Book

CompTIA recommends, but does not require, that candidates for the Network+ exam meet the following prerequisites:

- CompTIA A+ certification or equivalent knowledge
- At least 9 to 12 months of work experience in IT networking

CompTIA's certification program relies on exams that measure your ability to perform a specific job function or set of tasks. CompTIA develops the exams by analyzing the tasks performed by people who are currently working in the field. Therefore, the specific knowledge, skills, and abilities relating to the job are reflected in the certification exam.

Because the certification exams are based on real-world tasks, you need to gain hands-on experience with the applicable technology in order to master the exam. In a sense, you might consider hands-on experience in an organizational environment to be a prerequisite for passing the Network+ exam. Many of the questions relate directly to specific network products or technologies, so use opportunities at your school or workplace to practice using the relevant tools. Candidates for the exam are also expected to have a basic understanding of enterprise technologies, including cloud and virtualization.

How To Use This Book

Although you can use this book in a number of ways, you might begin your studies by taking one of the practice exams as a pretest. After completing the exam, review your results for each Objective Domain and focus your studies first on the Objective Domains for which you received the lowest scores.

As this book contains only practice questions and answers, the best method to prepare for the Network+ exam is to use this book along with a companion book that provides more extensive explanations for the elements covered in each objective domain. Todd Lammle's *CompTIA Network+ Study Guide: Exam N10-007* provides complete coverage of all the technology you need to know for the exam.

After you have taken your pretest, you can use the chapters for the objective domains in which you need work to test your detailed knowledge and learn more about the technologies involved. By reviewing why the answers are correct or incorrect, you can determine if you need to study the objective topics more.

What's Next

The next step is to review the objective domains for the Network+ N10-007 exam and think about which topics you need to work on most. Then, you can turn to the appropriate chapter and get started. Good luck on the exam.

Chapter 1

Networking Concepts

THE COMPTIA NETWORK+ EXAM N10-007 TOPICS COVERED IN THIS CHAPTER INCLUDE THE FOLLOWING:

✓ 1.1 Explain the purposes and uses of ports and protocols

- Protocols and Ports
 - SSH 22
 - DNS 53
 - SMTP 25
 - SFTP 22
 - FTP 20, 21
 - TFTP 69
 - TELNET 23
 - DHCP 67, 68
 - HTTP 80
 - HTTPS 443
 - SNMP 161
 - RDP 3389
 - NTP 123
 - SIP 5060, 5061
 - SMB 445
 - POP 110
 - IMAP 143
 - LDAP 389
 - LDAPS 636
 - H.323 1720
- Protocol Types
 - ICMP
 - UDP





- TCP
- IP
- Connection-oriented vs. connectionless

✓ **1.2 Explain devices, applications, protocols and services at their appropriate OSI layers**

- Layer 1 – Physical
- Layer 2 – Data link
- Layer 3 – Network
- Layer 4 – Transport
- Layer 5 – Session
- Layer 6 – Presentation
- Layer 7 – Application

✓ **1.3 Explain the concepts and characteristics of routing and switching**

- Properties of network traffic
 - Broadcast domains
 - CSMA/CD
 - CSMA/CA
 - Collision domains
 - Protocol data units
 - MTU
 - Broadcast
 - Multicast
 - Unicast
- Segmentation and interface properties
 - VLANs
 - Trunking (802.1q)
 - Tagging and untagging ports
 - Port mirroring
 - Switching loops/spanning tree



- PoE and PoE+ (802.3af, 802.3at)
- DMZ
- MAC address table
- ARP table
- Routing
 - Routing protocols (IPv4 and IPv6)
 - Distance-vector routing protocols
 - RIP
 - EIGRP
 - Link-state routing protocols
 - OSPF
 - Hybrid
 - BGP
 - Routing types
 - Static
 - Dynamic
 - Default
- IPv6 concepts
 - Addressing
 - Tunneling
 - Dual stack
 - Router advertisement
 - Neighbor discovery
- Performance concepts
 - Traffic shaping
 - QoS
 - Diffserv
 - CoS
- NAT/PAT
- Port forwarding



- Access control list
- Distributed switching
- Packet-switched vs. circuit-switched network
- Software-defined networking

✓ **1.4 Given a scenario, configure the appropriate IP addressing components**

- Private vs. public
- Loopback and reserved
- Default gateway
- Virtual IP
- Subnet mask
- Subnetting
 - Classful
 - Classes A, B, C, D, and E
 - Classless
 - VLSM
 - CIDR notation (IPv4 vs. IPv6)
- Address assignments
 - DHCP
 - DHCPv6
 - Static
 - APIPA
 - EUI64
 - IP reservations

✓ **1.5 Compare and contrast the characteristics of network topologies, types and technologies**

- Wired topologies
 - Logical vs. physical
 - Star
 - Ring
 - Mesh
 - Bus



- Wireless topologies
 - Mesh
 - Ad hoc
 - Infrastructure
- Types
 - LAN
 - WLAN
 - MAN
 - WAN
 - CAN
 - SAN
 - PAN
- Technologies that facilitate the Internet of Things (IoT)
 - Z-Wave
 - Ant+
 - Bluetooth
 - NFC
 - IR
 - RFID
 - 802.11

✓ **1.6 Given a scenario, implement the appropriate wireless technologies and configurations**

- 802.11 standards
 - a
 - b
 - g
 - n
 - ac
- Cellular
 - GSM
 - TDMA
 - CDMA



- Frequencies
 - 2.4GHz
 - 5.0GHz
- Speed and distance requirements
- Channel bandwidth
- Channel bonding
- MIMO/MU-MIMO
- Unidirectional/omnidirectional
- Site surveys

✓ 1.7 Summarize cloud concepts and their purposes

- Types of services
 - SaaS
 - PaaS
 - IaaS
- Cloud delivery models
 - Private
 - Public
 - Hybrid
- Connectivity methods
- Security implications/considerations
- Relationship between local and cloud resources

✓ 1.8 Explain the functions of network services.

- DNS service
 - Record types
 - A, AAA
 - TXT (SPF, DKIM)
 - SRV
 - MX
 - CNAME
 - NS
 - PTR



- Internal vs. external DNS
- Third-party/cloud-hosted DNS
- Hierarchy
- Forward vs. reverse zone
- DHCP service
 - MAC reservations
 - Pools
 - IP exclusions
 - Scope options
 - Lease time
 - TTL
 - DHCP relay/IP helper
- NTP
- IPAM

1. Which of the following pairs of well-known ports are the default values you would use to configure a POP3 email client?
 - A. 110 and 25
 - B. 143 and 25
 - C. 110 and 143
 - D. 80 and 110
 - E. 25 and 80

2. Which of the following server applications use two well-known port numbers during a typical transaction?
 - A. NTP
 - B. SNMP
 - C. HTTP
 - D. FTP

3. Which of the following protocols does the Ping utility use to exchange messages with another system?
 - A. UDP
 - B. TCP
 - C. ICMP
 - D. IGMP

4. Which of the following components does the port number in a transport layer protocol header identify?
 - A. A transport layer protocol
 - B. An application
 - C. A gateway
 - D. A proxy server

5. Which of the following organizations is responsible for assigning the well-known port numbers used in transport layer protocol headers?
 - A. Institute for Electronic and Electrical Engineers (IEEE)
 - B. Internet Assigned Numbers Authority (IANA)
 - C. Internet Engineering Task Force (IETF)
 - D. International Organization for Standardization (ISO)

6. A client on a TCP/IP network is attempting to establish a session with a server. Which of the following correctly lists the order of Transmission Control Protocol (TCP) session establishment messages?
 - A. SYN, ACK, SYN, ACK
 - B. SYN, SYN, ACK, ACK

- C. SYN/ACK, SYN/ACK
 - D. SYN, SYN/ACK, ACK
7. Which of the following is the default well-known port number for the Hypertext Transfer Protocol (HTTP) used for web client/server communications?
- A. 22
 - B. 20
 - C. 80
 - D. 1720
8. The secured version of the Hypertext Transfer Protocol (HTTPS) uses a different well-known port from the unsecured version. Which of the following ports is used by HTTPS by default?
- A. 25
 - B. 80
 - C. 110
 - D. 443
9. Which of the following Transmission Control Protocol (TCP) control bits is set to 1 to initiate the termination of a session?
- A. SYN
 - B. URG
 - C. FIN
 - D. END
 - E. PSH
10. What field in the Transmission Control Protocol (TCP) Option subheader specifies the size of the largest segment a system can receive?
- A. MSS
 - B. Window
 - C. MMS
 - D. WinMS
11. What is the term for the combination of an IPv4 address and a port number, as in the following example: 192.168.1.3:23?
- A. Socket
 - B. OUI
 - C. Well-known port
 - D. Network address
 - E. Domain

12. Which of the following protocols generate messages that are carried directly within Internet Protocol (IP) datagrams, with no intervening transport layer protocol? (Choose all correct answers.)
- A. ICMP
 - B. IGMP
 - C. SMTP
 - D. SNMP
13. Which of the following protocols is used to exchange directory service information?
- A. RDP
 - B. LDAP
 - C. SNMP
 - D. SMB
14. Which of the following is the primary application layer protocol used by web browsers to communicate with web servers?
- A. HTTP
 - B. HTML
 - C. SMTP
 - D. FTP
15. Which of the following protocols appears on the network as a service that client computers use to resolve names into IP addresses?
- A. DHCP
 - B. BOOTP
 - C. DNS
 - D. SNMP
16. Which of the following protocols use(s) the term *datagram* to describe the data transfer unit it creates? (Choose all correct answers.)
- A. Ethernet
 - B. IP
 - C. TCP
 - D. UDP
17. What is the native file sharing protocol used on all Microsoft Windows operating systems?
- A. Hypertext Transfer Protocol (HTTP)
 - B. Network File System (NFS)
 - C. File Transfer Protocol (FTP)
 - D. Server Message Block (SMB)
 - E. Lightweight Directory Access Protocol (LDAP)

18. When analyzing captured TCP/IP packets, which of the following control bits must you look for in the Transmission Control Protocol (TCP) header to determine whether the receiving host has successfully received the sending host's data?
- A. ACK
 - B. FIN
 - C. PSH
 - D. SYN
 - E. URG
19. Which of the following terms describes the Transmission Control Protocol (TCP) exchange that establishes a connection prior to the transmission of any data?
- A. Synchronization
 - B. Initialization exchange
 - C. Connection establishment
 - D. Three-way handshake
20. Alice has been instructed to install 100 Windows workstations, and she is working on automating the process by configuring the workstations to use PXE boots. Each workstation therefore must obtain an IP address from a DHCP server and download a boot image file from a TFTP server. Which of the following well-known ports must Alice open on the firewall separating the workstations from the servers? (Choose all correct answers.)
- A. 65
 - B. 66
 - C. 67
 - D. 68
 - E. 69
21. Which of the following explanations best describes the function of a Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) port number?
- A. The port number indicates to the receiver that the sender can activate a specific port only.
 - B. The port number is used by both the sender and the receiver to identify the application that generated the information in the datagram.
 - C. The port number is used only by the receiver to indicate the application process running on the sender.
 - D. The port number is used by both the sender and the receiver to negotiate a well-known server port for the communicating processes.
22. What is the valid range of numbers for the ephemeral client ports used by the Transmission Control Protocol (TCP) and User Datagram Protocol (UDP)?
- A. 1023 through 65534
 - B. 1 through 1024
 - C. 49152 through 65535
 - D. 1024 to 49151

23. Which of the following statements about the User Datagram Protocol (UDP) are true? (Choose all correct answers.)
- A. UDP does not use packet sequencing and acknowledgments.
 - B. UDP uses packet sequencing and acknowledgments.
 - C. UDP is a connection-oriented protocol.
 - D. UDP is a connectionless protocol.
 - E. UDP has an 8-byte header.
 - F. UDP has a 20-byte header.
24. Which of the following port values are used by the File Transfer Protocol (FTP)? (Choose all correct answers.)
- A. 21
 - B. 23
 - C. 20
 - D. 53
 - E. 69
25. Which of the following protocols provides connectionless delivery service at the transport layer of the Open Systems Interconnection (OSI) model?
- A. TCP
 - B. HTTP
 - C. UDP
 - D. ARP
26. What is the valid range of numbers for the well-known Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) ports used by servers?
- A. 1024 through 49151
 - B. 1 through 49151
 - C. 49152 through 65534
 - D. 1 through 1023
27. Ralph is a network administrator who has just installed a new open source email server for the users at his company. The server is configured to send and receive Internet email and create a mailbox for each user that will permanently store the user's mail on the server. Ralph next uses a protocol analyzer to examine the network traffic resulting from the new server installation. Which of the following new protocols should Ralph expect to see in his network traffic analysis? (Choose all correct answers.)
- A. SNMP
 - B. SMTP
 - C. POP3

- D. IMAP
 - E. RIP
28. Which of the following values could a web client use as an ephemeral port number when communicating with a web server?
- A. 1
 - B. 23
 - C. 80
 - D. 1024
 - E. 1999
 - F. 50134
29. Which of the following protocols provides connection-oriented service with guaranteed delivery at the transport layer of the OSI model?
- A. TCP
 - B. HTTP
 - C. UDP
 - D. IP
30. Which of the following protocols is limited to use on the local subnet only?
- A. Address Resolution Protocol (ARP)
 - B. Dynamic Host Configuration Protocol (DHCP)
 - C. Domain Name System (DNS)
 - D. Simple Mail Transfer Protocol (SMTP)
31. At which of the following layers of the Open Systems Interconnection (OSI) model do the protocols on a typical local area network use MAC addresses to identify other computers on the network?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
32. Which of the following organizations developed the Open Systems Interconnection (OSI) model?
- A. International Telecommunication Union (ITU-T)
 - B. Comité Consultatif International Télégraphique et Téléphonique (CCITT)
 - C. American National Standards Institute (ANSI)
 - D. Institute of Electrical and Electronics Engineers (IEEE)
 - E. International Organization for Standardization (ISO)

33. Which layer of the Open Systems Interconnection (OSI) model is responsible for the logical addressing of end systems and the routing of datagrams on a network?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
34. What layer of the Open Systems Interconnection (OSI) model is responsible for translating and formatting information?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
35. Which of the following devices typically operates at the network layer of the Open Systems Interconnection (OSI) model?
- A. Proxy server
 - B. Hub
 - C. Network interface adapter
 - D. Router
36. Which layer of the Open Systems Interconnection (OSI) model provides an entrance point to the protocol stack for applications?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
37. Which layer of the Open Systems Interconnection (OSI) model is responsible for dialogue control between two communicating end systems?
- A. Physical
 - B. Data link

- C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
- 38.** Some switches can perform functions associated with two layers of the Open Systems Interconnection (OSI) model. Which two of the following layers are often associated with network switching? (Choose all correct answers.)
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
- 39.** At which layer of the Open Systems Interconnection (OSI) model are there TCP/IP protocols that can provide either connectionless or connection-oriented services to applications?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
- 40.** Which of the following layers of the Open Systems Interconnection (OSI) model typically have dedicated physical hardware devices associated with them? (Choose all correct answers.)
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application

41. At which layer of the Open Systems Interconnection (OSI) model is there a protocol that adds both a header and footer to the information that is passed down from an upper layer, thus creating a frame?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
42. Identify the layer of the Open Systems Interconnection (OSI) model that controls the addressing, transmission, and reception of Ethernet frames, and also identify the media access control method that Ethernet uses.
- A. Physical layer; Carrier Sense Multiple Access with Collision Detection (CSMA/CD)
 - B. Physical layer; Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)
 - C. Data link layer; CSMA/CD
 - D. Data link layer; CSMA/CA
43. At which layer of the OSI model do you find the protocol responsible for the delivery of data to its ultimate destination on an internetwork?
- A. Data link
 - B. Network
 - C. Session
 - D. Application
44. Which of the following is *not* a protocol operating at the network layer of the OSI model?
- A. IP
 - B. ICMP
 - C. IGMP
 - D. IMAP
45. Ed is a software developer who has been given the task of creating an application that requires guaranteed delivery of information between end systems. At which layer of the Open Systems Interconnection (OSI) model does the protocol that provides the guaranteed delivery run, and what type of protocol must Ed use?
- A. Data link layer; connectionless
 - B. Network layer; connection-oriented
 - C. Transport layer; connection-oriented
 - D. Application layer; connectionless

46. Which of the following devices operates only at the physical layer of the Open Systems Interconnection (OSI) model?
- A. Hub
 - B. Bridge
 - C. Switch
 - D. Router
47. Alice is a network administrator designing a new local area network (LAN). She needs to determine the type of cabling and the network topology to implement. Which layers of the Open Systems Interconnection (OSI) model apply to cabling and topology elements?
- A. Physical and data link layers
 - B. Data link and network layers
 - C. Network and transport layers
 - D. Transport and application layers
48. Which layers of the Open Systems Interconnection (OSI) model do not have protocols in the TCP/IP suite exclusively dedicated to them? (Choose all correct answers.)
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
49. The protocols at which layer of the Open Systems Interconnection (OSI) model use port numbers to identify the applications that are the source and the destination of the data in the packets?
- A. Application
 - B. Presentation
 - C. Transport
 - D. Network
50. Which of the following is a correct listing of the Open Systems Interconnection (OSI) model layers, in order, from top to bottom?
- A. Physical, data link, transport, network, session presentation, application
 - B. Application, session, presentation, transport, network, data link, physical
 - C. Presentation, application, transport, session, network, physical, data link
 - D. Session, application, presentation, transport, data link, network, physical
 - E. Application, presentation, session, transport, network, data link, physical

51. At which of the Open Systems Interconnection (OSI) model layers do switches and bridges perform their basic functions?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
52. Flow control is a function implemented in protocols operating at which layer of the Open Systems Interconnection (OSI) model?
- A. Presentation
 - B. Session
 - C. Transport
 - D. Network
53. Which layer of the Open Systems Interconnection (OSI) model defines the medium, network interfaces, connecting hardware, and signaling methods used on a network?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session
 - F. Presentation
 - G. Application
54. Which of the OSI model layers is responsible for syntax translation and compression or encryption?
- A. Data link
 - B. Network
 - C. Session
 - D. Presentation
 - E. Application
55. Which layer of the Open Systems Interconnection (OSI) model is responsible for transmitting signals over the network medium?
- A. Physical
 - B. Data link
 - C. Network
 - D. Transport
 - E. Session

- F. Presentation
 - G. Application
56. Specify the layer of the Open Systems Interconnection (OSI) model at which the Internet Protocol (IP) operates and whether it is connection-oriented or connectionless.
- A. Network; connection-oriented
 - B. Network; connectionless
 - C. Transport; connection-oriented
 - D. Transport; connectionless
57. An Ethernet network interface adapter provides functions that span which two layers of the Open Systems Interconnection (OSI) model?
- A. Physical and data link
 - B. Data link and network
 - C. Network and transport
 - D. Transport and application
58. Which of the following protocols operate at the application layer of the Open Systems Interconnection (OSI) model? (Choose all correct answers.)
- A. HTTP
 - B. SNMP
 - C. ICMP
 - D. IGMP
 - E. UDP
59. Which layer of the Open Systems Interconnection (OSI) model would be responsible for converting a text file encoded using EBCDIC on the sending system into ASCII code, when required by the receiving system?
- A. Application
 - B. Presentation
 - C. Session
 - D. Physical
60. Which of the following protocols operates at the network layer of the OSI model but does not encapsulate data generated by an upper layer protocol for transmission over the network?
- A. IP
 - B. UDP
 - C. ARP
 - D. ICMP
 - E. TCP

61. Which of the following could be a valid MAC address for a network interface adapter?
- A. 10.124.25.43
 - B. FF:FF:FF:FF:FF:FF
 - C. 00:1A:6B:31:9A:4E
 - D. 03:AE:16:3H:5B:11
 - E. fe80::89a5:9e4d:a9d0:9ed7
62. Which of the following TCP/IP parameters, configured on an end system, specifies the Internet Protocol (IP) address of a router on the local network that provides access to other networks?
- A. WINS Server Addresses
 - B. Default Gateway
 - C. DNS Server Addresses
 - D. Subnet Gateway
63. Which of the following services enables computers on a private IPv4 network to access the Internet using a registered IP address?
- A. DHCP
 - B. NAT
 - C. DNS
 - D. NTP
64. Which of the following protocols prevents network switching loops from occurring by shutting down redundant links until they are needed?
- A. RIP
 - B. STP
 - C. VLAN
 - D. NAT
65. Which of the following are techniques used in traffic shaping to prevent networks from being overwhelmed by data transmissions? (Choose all correct answers.)
- A. Bandwidth throttling
 - B. Rate limiting
 - C. Broadcast storming
 - D. Network address translation
66. Which of the following best defines the concept of the dual stack?
- A. A computer with two network interface adapters
 - B. A computer with two installed operating systems

- C. A computer with two sets of networking protocols
 - D. A computer with connections to two different network segments
- 67.** An enterprise network has been designed with individual departmental switches because in most cases, the devices in a specific department exchange network traffic with other devices in the same department. Each of the departmental switches is also connected to a host switch, which enables devices to communicate with other departments. Which of the following terms describes this switching architecture?
- A. Distributed switching
 - B. Port forwarding
 - C. Traffic shaping
 - D. Neighbor discovery
- 68.** Which of the following terms refers to methods by which network traffic is prioritized to prevent applications from suffering faults due to network congestion?
- A. Port forwarding
 - B. Dynamic routing
 - C. VLANs
 - D. QoS
- 69.** Which of the following statements about Routing Information Protocol version 1 (RIPv1) is true? (Choose all correct answers.)
- A. RIPv1 broadcasts the entire contents of the routing table every 30 seconds.
 - B. RIPv1 advertises the subnet mask along with the destination network.
 - C. RIPv1 broadcasts only the elements in the routing table that have changed every 60 seconds.
 - D. RIPv1 does not include the subnet mask in its network advertisements.
- 70.** Which of the following is an example of a circuit-switched network connection, as opposed to a packet-switched network connection?
- A. Two wireless computers using an ad hoc topology
 - B. A landline voice telephone call
 - C. A smartphone connecting to a cellular tower
 - D. Computers connected by a wired LAN
- 71.** Which of the following mechanisms for prioritizing network traffic uses a 6-bit classification identifier in the Internet Protocol (IP) header?
- A. Diffserv
 - B. CoS
 - C. Traffic shaping
 - D. QoS

72. Which of the following is a network layer protocol that uses ICMPv6 messages to locate routers, DNS servers, and other nodes on an IPv6 network?
- A. BGP
 - B. NDP
 - C. OSPF
 - D. PoE
73. Which of the following is a protocol that identifies VLANs by inserting a 32-bit field in the Ethernet frame?
- A. IEEE 802.1P
 - B. IEEE 802.1Q
 - C. IEEE 802.1X
 - D. IEEE 802.1AB
74. Which of the following is *not* an advantage of packet switching over circuit switching?
- A. Packets can be transmitted out of order.
 - B. Packets can take different routes to the destination.
 - C. Packets can be stored temporarily in the event of network congestion.
 - D. Packets can be routed around areas of network congestion.
75. Which of the following statements about static routing are true? (Choose all correct answers.)
- A. Static routes are manually configured routes that administrators must add, modify, or delete when a change in the network occurs.
 - B. Static routes are automatically added to the routing table by routing protocols when a new network path becomes available.
 - C. Static routes adapt to changes in the network infrastructure automatically.
 - D. Static routes are a recommended solution for large internetworks with redundant paths to each destination network.
 - E. Static routes are a recommended solution for small internetworks with a single path to each destination network.
76. Which of the following TCP/IP routing protocols does not include the subnet mask within its route update messages, preventing it from supporting subnetting?
- A. Routing Information Protocol, version 1 (RIPv1)
 - B. Routing Information Protocol, version 2 (RIPv2)
 - C. Border Gateway Protocol (BGP)
 - D. Open Shortest Path First (OSPF)
77. Which of the following terms refers to a routing protocol that does *not* rely on hop counts to measure the efficiency of routes?
- A. Interior gateway protocol
 - B. Edge gateway protocol

- C. Distance vector protocol
 - D. Link state protocol
78. What is the maximum number of routes that can be included in a single RIP broadcast packet?
- A. 20
 - B. 25
 - C. 32
 - D. Unlimited
79. Which of the following routing protocols can you use on a TCP/IP internetwork with segments running at different speeds, making hop counts an inaccurate measure of route efficiency? (Choose all correct answers.)
- A. Enhanced Interior Gateway Routing Protocol (EIGRP)
 - B. Routing Information Protocol (RIP)
 - C. Open Shortest Path First (OSPF)
 - D. Border Gateway Protocol (BGP)
80. What is the term for the process by which dynamic routing protocols update other routers with routing table information?
- A. Convergence
 - B. Distance vectoring
 - C. Redistribution
 - D. Dissemination
81. Which of the following are terms for an area of an enterprise network, separated by firewalls, that contains servers that must be accessible both from the Internet and from the internal network? (Choose all correct answers.)
- A. Intranet
 - B. DMZ
 - C. EGP
 - D. Stateless network
 - E. Perimeter network
82. Each of the following Carrier Sense Multiple Access with Collision Detection (CSMA/CD) events occurs on an Ethernet network when two stations transmit simultaneously, although not in the order listed. Which of the following events occurs immediately after the collision?
- A. The two stations observe a random back-off interval.
 - B. The two stations transmit a jam signal.
 - C. The two stations stop transmitting.
 - D. The two stations listen to see if the channel is idle.
 - E. The two stations begin retransmitting their frames.

- 83.** Which of the following TCP/IP routing protocols measures the efficiency of routes by the number of hops between the source and the destination?
- A.** Routing Information Protocol (RIP)
 - B.** Open Shortest Path First (OSPF)
 - C.** Border Gateway Protocol (BGP)
 - D.** Intermediate System to Intermediate System (IS-IS)
- 84.** Which of the following IEEE standards calls for the use of the Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) media access control mechanism?
- A.** 802.11ac
 - B.** 802.1X
 - C.** 802.3
 - D.** All of the above
- 85.** Which of the following devices is used to physically connect computers in the same VLAN?
- A.** A bridge
 - B.** A hub
 - C.** A switch
 - D.** A router
- 86.** Which of the following statements is true about an Ethernet network that uses CSMA/CD?
- A.** Collisions are a normal occurrence.
 - B.** Collisions never occur unless there is a network fault.
 - C.** Collisions cause data to be irretrievably lost.
 - D.** Collisions are the result of duplicate IP addresses.
- 87.** VLANs create the administrative boundaries on a switched network that are otherwise provided by which of the following devices?
- A.** Hubs
 - B.** Routers
 - C.** Domains
 - D.** Bridges
- 88.** Which of the following statements about VLANs are true? (Choose all correct answers.)
- A.** All of the devices in a particular VLAN must be physically connected to the same switch.
 - B.** A VLAN creates a limited broadcast domain on a switched network.
 - C.** You must have VLANs on a switched network for communication between computers on different cable segments to occur.
 - D.** A router is required for communication between VLANs.