

# First-Year Companion Guide 2<sup>nd</sup> Edition

## Chapter 2 (16)

### Check Your Understanding

1. Which of the following best describes a WAN?
  - A. Connects LANs that are separated by a large geographic area
  - B. Connects workstations, terminals, and other devices in a metropolitan area
  - C. Connects LANs within a large building
  - D. Connects workstations, terminals, and other devices within a building
2. How do WANs differ from LANs?
  - A. WANs emphasize access over serial interfaces operating at lower speeds.
  - B. WANs provide high-speed multiple access services.
  - C. WANs typically exist in small geographic areas.
  - D. WANs use tokens to regulate network traffic.
3. Which of the following are examples of WAN technologies?
  - A. Token Ring, ARCNet
  - B. Frame Relay, ISDN
  - C. Star, Banyan VINES
  - D. CSU/DSU, ARCVIEW
4. Which layers of the OSI model do WAN standards describe?
  - A. Data link and network
  - B. Data link and presentation
  - C. Physical and application
  - D. Physical and data link
5. Which best describes data circuit-terminating equipment (DCE)?
  - A. Consists of the user device at the end of a network
  - B. Serves as the data source or destination
  - C. Consists of physical devices such as protocol translators and multiplexors
  - D. Consists of physical devices at the end of a WAN connection
6. Which of the following components provide interface voice-grade services, channel service units/digital service units (CSU/DSUs) that interface T1/E1 services, and Terminal Adapters/Network Termination 1(TA/NT1s) that interface Integrated Services Digital Network (ISDN) services?
  - A. Switches
  - B. Routers
  - C. Modems
  - D. Communication servers
7. Which of the following concentrates the dial-in and dial-out user connections?
  - A. Switches
  - B. Routers
  - C. Modems
  - D. Communication servers
8. Some WAN physical and data link layer standards are:
  - A. EIA/TIA-232
  - B. PPP
  - C. Frame Relay
  - D. All of the above

9. Match the functions with the components.
1. RAM/DRAM
  2. NVRAM
  3. ROM
  4. Flash memory
  5. Interface
- a. Stores a router's backup/startup configuration file  
b. Stores routing tables, the ARP cache, the fast-switching cache, pack buffering (shared RAM), and packet hold queues  
c. Contains power-on diagnostics, a bootstrap program, and operating system software  
d. Serves as a network connection through which packets enter and exit a router  
e. Holds the operating system image and microcode; enables you to update software without removing and replacing chips on the processor
- A. 1-b, 2-a, 3-c, 4-e, 5-d
  - B. 1-a, 2-b, 3-c, 4-e, 5-d
  - C. 1-b, 2-a, 3-e, 4-c, 5-d
  - D. 1-b, 2-a, 3-c, 4-d, 5-e
10. Any internetwork will probably include the following:
- A. Consistent end-to-end addressing and priority-level bandwidth allocation capabilities
  - B. Addresses that represent network topologies and assurance of quality of service
  - C. Best-path selection and dynamic routing
  - D. All of the above
11. Which of the following are data link encapsulations for WAN?
- A. High-Level Data Link Control (HDLC)
  - B. Frame Relay
  - C. Point-to-Point Protocol (PPP)
  - D. All of the above
12. What are the main functions of routers?
- A. The determination of best paths for incoming data packets, and the switching of packets to the proper outgoing interface
  - B. Replying to ARP requests when two nodes are on different LANs
  - C. Building routing tables and exchanging the network information contained within them with other routers
  - D. Both A and B
13. Which is an IBM-designed WAN data link for Systems Network Architecture (SNA) environments, largely being replaced by the more versatile HDLC?
- A. Serial Line Interface Protocol
  - B. Point-to-Point Protocol
  - C. Synchronous Data Link Control Protocol
  - D. Simple Data Level Control Protocol
14. Which WAN data link protocol is used for signaling and call setup on ISDN D channel?
- A. LAPD
  - B. LAPF
  - C. LAPB
  - D. LAPR
15. Identify the WAN circuit-switched service(s):
- A. Plain old telephone services (POTS)
  - B. Narrowband ISDN with a maximum bandwidth of 1.544 Mbps
  - C. Narrowband ISDN with a maximum bandwidth of 128 kbps
  - D. Both A and C

16. Which service has become an extremely popular WAN technology in its own right, more efficient than X.25 but with similar services, maximum bandwidth of 44.736 Mbps, and popular 56-kbps and 384-kbps implementations extremely popular in the United States?  
A. Frame Relay  
B. X.25  
C. POTS  
D. ATM
17. Identify the cell-switched technology/technologies:  
A. ATM  
B. Switched Multimegabit Data Service  
C. T1  
D. Both A and B
18. Identify the common type(s) of DSL technology/technologies:  
A. High bit-rate DSL (HDSL)  
B. Single-line DSL (SDSL)  
C. Asymmetric DSL (ADSL)  
D. All of the above
19. Which is a family of very high-speed physical layer technologies with a series of data rates available with special designations, implemented at different optical carrier (OC) levels ranging from 51.84 Mbps (OC-1) to 9952 Mbps(OC-192), that can achieve these amazing data rates by using wavelength division multiplexing (WDM)?  
A. SONET  
B. HDSL  
C. ATM  
D. SMDS
20. Which are the kind of routers that form the primary paths for traffic that is sourced from and destined to other networks?  
A. Internal routers  
B. Area Border Routers  
C. Backbone routers  
D. Autonomous System (AS) Boundary Routers

#### Answers

1. A   2. A   3. B   4. D   5. D   6. C   7. D   8. D   9. A   10. D   11. D  
12. D   13. C   14. A   15. D   16. A   17. D   18. D   19. A   20. C