Chapter 3 – Network Topologies and Technologies

Review Questions

1. Which of the following describes the arrangement of network cabling between devices?
    a. Logical topology
    b. Networking technology
    c. Physical topology
    d. Media access method

2. Which of the following is an advantage of a star topology? (Choose all that apply.)
    a. Allows faster technologies than a bus does
    b. Requires less cabling than a bus
    c. Centralized monitoring of network traffic
    d. No single point of failure

3. Which topology is likely to be deployed in a WAN where there's a central office and three branch offices, and you want all traffic from the branch offices to go through the central office network?
    a. Ring
    b. PMP
    c. Mesh
    d. Point-to-point

4. Which technology is likely to be implemented as a point-to-point physical topology?
    a. Wi-Fi infrastructure mode
    b. FDDI
    c. Ethernet
    d. Wireless bridge

5. Which of the following describes a hub-based Ethernet network?
    a. Physical bus
    b. Logical bus
    c. Physical switching
    d. Logical star

6. You're configuring a WLAN in a long narrow ballroom. The only place you can put the AP is at the far end of the room. Which type of antenna should you use?
    a. Unidirectional
    b. Bidirectional
    c. Omnidirectional
    d. Semidirectional

7. Which best describes a typical wireless LAN?
    a. Logical ring topology
    b. Logical switching topology
    c. Logical bus topology
    d. Logical star topology

8. Which of the following is a characteristic of a switched logical topology? (Choose all that apply.)
   a. Uses a physical bus topology
   b. Creates dynamic connections
   c. Sometimes called a shared-media topology
   d. Uses a physical star topology
9. Which of the following is a characteristic of unshielded twisted-pair cabling? (Choose all that apply.)
   a. Consists of four wires
   b. Commonly used in physical bus topologies
   c. Has a distance limitation of 100 meters
   d. Susceptible to electrical interference
10. Which of the following is a characteristic of fiber-optic cabling? (Choose all that apply.)
    a. Can be used in electrically noisy environments
    b. Requires only a single strand of fiber for network connections
    c. Carries data over longer distances than UTP
    d. Lower bandwidth capability
11. Which topology most likely uses coaxial cabling?
    a. Physical star
    b. Logical ring
    c. Physical bus
    d. Logical switching
12. Which of the following is true of a MAC address?
    a. A MAC address of all binary 1s in the source address indicates a broadcast frame.
    b. It's sometimes called a logical address.
    c. A destination address of 12 hexadecimal Fs is a broadcast.
    d. It's composed of 12 bits.
13. Which type of Wi-Fi signal interference is most likely to be caused by leaves on trees?
    a. Diffraction
    b. Reflection
    c. Refraction
    d. Scattering
14. Which of the following is a field of the most common Ethernet frame type? (Choose all that apply.)
    a. ARP trailer   ARP for switch (MAC Address)
    b. FCS
    c. Destination MAC Address
    d. Data
    e. MAC type
15. Which access method uses a "listen before sending" strategy?
    a. Token passing
    b. CSMA/CD
    c. Token bus
    d. Polling

16. Which of the following is true about full-duplex Ethernet? (Choose all that apply.)

    a. Stations can transmit and receive but not at the same time.

    b. Collision detection is turned off.

    c. It's possible only with switches.

    d. It allows a physical bus to operate much faster.

17. Which of the following is defined by the extent to which signals in an Ethernet bus topology network are propagated?

    a. Physical domain

    b. Collision domain

    c. Broadcast domain

    d. Logical domain

18. Which of the following is considered a property of Ethernet? (Choose all that apply.)

    a. Scalable

    b. Best-effort delivery system

    c. Guaranteed delivery system

    d. Obsolete technology

19. Which of the following is true of IEEE 802.3an?

    a. Requires two pairs of wires

    b. Uses Category 5 or higher cabling

    c. Currently best for desktop computers

    d. Operates only in full-duplex mode

20. Which of the following is a feature of 100BaseFX? (Choose all that apply.)

    a. Often used as backbone cabling

    b. Best when only short cable runs are needed

    c. The fastest of the Ethernet standards

    d. Uses two strands of fiber

21. Which Wi-Fi standard can provide the highest bandwidth?

    a. 802.11ac

    b. 802.11b

    c. 802.11n

    d. 802.11g

22. Which of the following is true about infrastructure mode in wireless networks? (Choose all that apply.)

    a. Best used for temporary networks

    b. Uses a central device

    c. Resembles a physical bus and logical ring

    d. Most like a logical bus and physical star

23. How many channels can be used on an 802.11b network in North America?

    a. 7

    b. 9

    c. 11

    d. 13

24. Which access method does Wi-Fi use?
    a. CSMA/CD
    b. Token bus
    c. Demand priority
    d. CSMA/CA
25. Which Wi-Fi standard uses beamforming to allow an AP to send data to multiple devices simultaneously?
    a. 802.11ac
    b. 802.11n
    c. 802.11a
    d. 802.11g