CHAPTER 3

Underlying Technologies

3.1 MULTIPLE-CHOICE QUESTIONS

1. c	3. c	5. b	7. a	9. a
11. a	13. a	15. d	17. b	19. a
21. a	23. d			

3.2 EXERCISES

25. A station on a busy CSMA/CD LAN is likely to wait longer than a station on a busy token ring LAN because on the token ring, each station has an equal opportunity to send a frame as the token circulates around the ring. In this way, all stations have equal access to the LAN and no station has to wait very long to send each frame. On a CSMA/CD LAN with heavy traffic, there will be many collisions. After each collision, any station wishing to send data must wait for a random period of time before trying to transmit data. It may take some time for a station to be able to send the data.

27. Speed of propagation: 200,000,000 meters/second

    2500 meters / 200,000,000 meters/second = 12.5 microseconds

    It would take a bit 12.5 microseconds to travel 2500 meters.

29. Assume that the minimum frame size is 65 bytes.

    65 bytes × 8 bits / byte = 520 bits.

    If the data rate is 10 Mbps, 520 bits can be generated in:

    520 bits / 10,000,000 bits/second = 52 microseconds

31. 46 - 42 = 4