CHAPTER 15

Wireless LANs

Review Questions

1. A BSS is the basic building block of an ad hoc wireless LAN. An ESS is two or more BSSs that have APs.
2. A station with no-transition mobility is either stationary or moving only inside a BSS. A station with BSS-transition mobility can move from one BSS to anther, but the movement is confined inside one ESS. A station with ESS-transition mobility can move from one ESS to another.
3. FHSS is a a signal generation method in which the sender sends on one carrier frequency for a short amount of time, then hops to another carrier frequency for the same amount of time, hops again to still another for the same amount of time, and so on.
4. DSSS is a signal generation method in which each bit sent by the sender is replaced by a sequence of bits called a chip code.
5. In OFDM all the subbands are used by one source at a given time.
6. Stations on wireless LANs use CSMA/CA.
7. The NAV is a value that shows the amount of time that must pass before a station can check for an idle medium.
8. Wireless LANs use management frames, control frames, and data frames.
9. A management frame is used for the initial communication between stations and access points. A control frame is used for accessing the channel and acknowledging frames.
10. A Bluetooth network can be used in a small health care center or in the home as a security system.
11. A Bluetooth network is called a piconet. A scatternet is two or more piconets.
12. Bluetooth radio layer ==> Internet physical layer
    Bluetooth baseband layer ==> MAC sublayer of Internet data link layer
    Bluetooth L2CAP layer ==> LLC sublayer of Internet data link layer

13. A Bluetooth master and slave can be connected by a synchronous connection-oriented link or a synchronous connectionless link.
14. The master sends on the even-numbered slots; the slave sends on the odd-numbered slots.
15. They all use 259 microseconds for hopping.
16. L2CAP is used for data exchange on an ACL link.

Multiple-Choice Questions

17. b
18. c
19. d
20. d
21. c
22. a
23. a
24. a
25. b
26. c
27. a
28. c
29. d
30. d
31. a
32. d
33. b
34. c
35. a
36. a
37. b
38. a
39. a
40. d
41. a
42. b

Exercises

43. See Table 15.1

Table 15.1 *Exercise 43*

Types of Mobility	*Movement inside BSS*	*Movement between BSSs*	*Movement between ESSs*
No transition	Yes	No	No
BSS transition	Yes	Yes	No
ESS transition	Yes	Yes	Yes

44. In CSMA/CD, the protocol allows collisions to happen. If there is a collision, it will be detected, destroyed, and the frame will be resent. CSMA/CA uses a technique that prevents collision.

45. See Table 15.2.

Table 15.2 *Exercise 45*

Fields	*802.3 field size (bytes)*	*802.11 field size (bytes)*
Destination Address	6	
Source Address	6	
Address 1		6
Address 2		6
Address 3		6
Address 4		6
FC		2
D/ID		2
SC		2
PDU Length	2	
Data and Padding	46 to 1500	
Frame Body	64-1518	0 to 2312
FCS (CRC)	4	4