CHAPTER 14

Wireless LANs

Solutions to Odd-Numbered Review Questions and Exercises

Review Questions

1. The ***basic service set (BSS)*** is the building block of a wireless LAN. A BSS without an AP is called an ad hoc architecture; a BSS with an AP is sometimes referred to as an infrastructure network. An ***extended service set (ESS)*** is made up of two or more BSSs with APs. In this case, the BSSs are connected through a distribution system, which is usually a wired LAN.

3. The ***orthogonal frequency-division multiplexing (OFDM)*** method for signal generation in a 5-GHz ISM band is similar to ***frequency division multiplexing (FDM)***, with one major difference: All the subbands are used by one source at a given time. Sources contend with one another at the data link layer for access.

5. ***Network Allocation Vector (NAV)*** forces other stations to defer sending their data if one station acquires access. In other words, it provides the collision avoidance aspect. When a station sends an RTS frame, it includes the duration of time that it needs to occupy the channel. The stations that are affected by this transmission create a timer called a NAV.

7. The following shows the relationship:

Radio layer	→	**Internet physical layer**
Baseband layer	→	**MAC sublayer of Internet data link layer**
L2CAP layer	→	**LLC sublayer of Internet data link layer**

9. The primary sends on the ***even-numbered*** slots; the secondary sends on the ***odd-numbered*** slots.

Exercises

11. 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.

2