CHAPTER 16

Connecting LANs, Backbone Networks, and Virtual Networks

Review Questions

1. An amplifier amplifies the signal, as well as noise that may come with the signal, whereas a repeater regenerates the signal, creating its copy bit for bit at the original strength.
2. Bridges have access to station addresses and can forward a packet to the appropriate segment of the network. In this way, they filter traffic and help control congestion.
3. A transparent bridge is one in which the stations are completely unaware of the bridge's existence.
4. A signal can only travel so far before it becomes corrupted. A repeater regenerates the original signal; the signal can continue to travel and the LAN length is thus extended.
5. A hub is a multiport repeater.
6. A root bridge is the bridge with the smallest ID. A designated bridge has the least cost path between the LAN and the root bridge.
7. A forwarding port forwards a frame that it receives; a blocking port does not.
8. In a bus backbone, the logical topology of the backbone is a bus; in a star backbone, the logical topology is a star.
9. A VLAN saves time and money because reconfiguration is done through software. Physical reconfiguration is not necessary.
10. Members of a VLAN can send broadcast messages with the assurance that users in other groups will not receive these messages.
11. A VLAN creates virtual workgroups. Each workgroup member can send broadcast messages to others in the workgroup. This eliminates the need for multicasting and all the overhead messages associated with it.
12. Stations can be grouped by port number, MAC address, IP address, or by a combination of these characteristics.
13. TDM can be used to provide communication between switches.

Multiple-Choice Questions

14. d
15. c
16. d
17. a
18. d
19. d
20. b
21. a
22. a
23. a
24. a
25. d
26. b
27. b
28. d
29. b

Exercises

30.

Address	Port
A	1
E	3
B	1
C	2
D	2
E	3

31. See Figure 16.1.

Figure 16.1 *Exercise 31*