CHAPTER 18

TCP/IP

Multiple-Choice Questions

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

Exercises

23.

a. Class A: theoretically 2^{24}
b. Class B: theoretically 2^{16}
c. Class C: theoretically 2^{8}

25.

a. 127.240.103.125
b. 175.192.240.29
c. 223.176.31.93
d. 239.247.199.29
e. 247.243.135.221

27.

a. Class E

b. Class B
c. Class C
d. Class D
e. Class A

29.
a. 23.0.0.0
b. 126.0.0.0
c. 190.12.0.0
d. 220.34.8.0
e. No network address; it is class D
f. No network address; it is class E
g. No network address; it is class E

31.
a. 255.255.255.248
b. 255.255.255.224
c. 255.255.248.0

33.
a. 11111111 11111111 11111111 11000000
b. 11111111 11111111 11111111 11100000
c. 11111111 11111111 11111111 11110000
d. 11111111 11111111 11111111 00000000

35.
a. Theoretically 4, but some of them are reserved.
b. Theoretically 8, but some of them are reserved.
c. Theoretically 16, but some of them are reserved.
d. 0

37. 120.14.0.0
39. Figure 18.1 shows one solution.
41. Figure 18.2 shows one solution.
43.
a. 0000:0000:0000:0000:0000:0000:0000:0000
b. 0000:00AA:0000:0000:0000:0000:0000:0000
c. 0000:1234:0000:0000:0000:0000:0000:0003
d. 0123:0000:0000:0000:0000:0000:0001:0002

45. 58AB:C1
47. Although we did not discuss mapped addresses, they are discussed in any TCP/IP book (see TCP/IP Protocol Suite 2ed by Forouzan). A mapped address starts with 80 0s, followed by 16 ones, and a 32-bit IPv4 address at the end. Like compatible addresses (see Exercise 46), mapped addresses are used during the transition from IPv4 to IPv6. It is an IPv4 address (if we use only the last 32 bits) and, at the same

Figure 18.1 *Exercise 39*

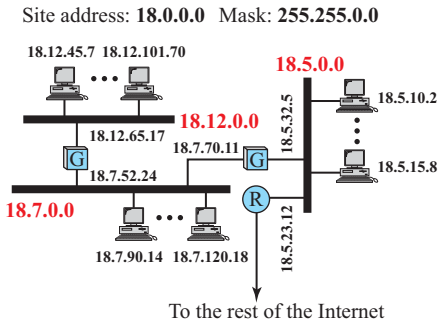
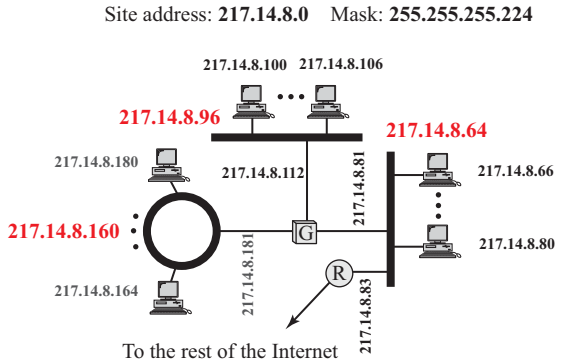


Figure 18.2 *Exercise 41*



time, an IPv6 address (if we use the whole 128 bits). The IP address 129.6.12.34 is shown below:**0000:0000:0000:0000:0000:FFFF:8106:0C22 or 0::FFFF:8106:C22**

49. FEC0::123
51. F
53. See Figure 18.3.
55. This is because any IPv6 address starting in “11111111” is a multicast address

Figure 18.3 *Exercise 53*