Chapter 6 – IP Addressing

Review Questions

1. An IPv6 address is made up of how many bits?
   a. 32
   b. 48
   c. 64
   d. 128
   e. 256
2. The subnet mask of an IP address does which of the following?.
   a. Provides encryption in a TCP/IP network
   b. Defines network and host portions of an IP address
   c. Allows automated IP address configuration
   d. Allows users to use a computer's name rather than its address
3. Which of the following is needed if a computer with the IP address 172.31.210.10/24 wants to communicate with a computer with the IP address 172.31.209.122/24?
   a. Hub
   b. Router
   c. Switch
   d. Server
4. Which of the following is a private IP address and can't be routed across the Internet?
   a. 192.156.90.100
   b. 172.19.243.254
   c. 11.200.99.180
   d. 221.24.250.207
   e. 12.12.12.12
5. Which command should you use with a dual-homed server to make sure the server sends packets out the correct interface?
   a. `ipconfig`
   b. `ping`
   c. `tracert`
   d. `route`
6. Which command should you use to configure the primary DNS server on your computer?
   a. `ipconfig`
   b. `netsh`
   c. `nslookup`
   d. `arp`
7. Which IP address expressed in CIDR notation has the subnet mask 255.255.255.0?
   a. 10.100.44.123/24
   b. 172.16.88.222/16
   c. 192.168.100.1/26
   d. 172.29.111.201/18

8. Which IP network address expressed in CIDR notation can support a maximum of 1022 hosts?
    a. 10.100.44.0/24
    b. 172.16.4.0/22
    c. 192.168.100.64/26
    d. 172.29.128.0/18
9. The IP address 10.240.0.0/8 can't be assigned to a host. True or False?
10. What's the term for each grouping of 8 bits in an IP address?
    a. Quartet
    b. Quintet
    c. Hexadecimal
    d. Octet
11. When using TCP/IP, which of the following must computers on the same logical network have in common? (Choose all that apply.)
    a. Network ID
    b. Host ID
    c. Subnet mask
    d. Computer name
12. Which of the following IPv6 features is an enhancement to IPv4? (Choose all that apply.)
    a. Larger address space
    b. Works at the Internetwork and Transport layers
    c. Built-in security
    d. Connectionless communication
13. Which protocol can configure a computer's IP address and subnet mask automatically?
    a. TCP
    b. IP
    c. ARP
    d. DNS
    e. DHCP
14. How many bits must be reallocated from host ID to network ID to create 16 subnets?
    a. 6
    b. 4
    c. 16
    d. 28
15. For the Class C network address 192.168.10.0, which of the following subnet masks provides 32 subnets?
    a. 255.255.255.252
    b. 255.255.255.248
    c. 255.255.255.240
    d. 255.255.255.224
16. How many host bits are necessary to assign addresses to 62 hosts?
    a. 6
    b. 5
    c. 4
    d. 3

17. Which IP addressing process enables workstations to use private IP addresses to access the Internet?
    a. Supernetting
    b. NAT
    c. DHCP
    d. Subnetting
18. When a Windows computer is configured to use DHCP but no DHCP server is available, what type of address is configured automatically for it?
    a. PAT
    b. APIPA
    c. NAT
    d. Static
19. Which of the following represents a valid IPv6 address?
    a. `2001:345:abcd:0:230:44`
    b. `2001:345:abcd::BEEF:44`
    c. `2001:345::abcd:0:79f::230:44`
    d. `2001:345:abcd:0:FEED:230:44`
20. Which of the following is a reason to subnet? (Choose all that apply.)
    a. Networks can be divided into logical groups.
    b. Subnetting eliminates the need for routers.
    c. Subnetting can decrease the size of broadcast domains.
    d. There's no need to assign static IP addresses to each computer.
21. Which of the following IP addresses has 12 bits in the host ID?
    a. 172.31.21.12/16
    b. 172.31.89.100/12
    c. 12.49.127.88/8
    d. 12.156.109.252/20
22. You have a server with two NICs, each attached to a different IP network. You're having problems communicating with devices on remote networks that send packets to one of the interfaces. The server receives the packets fine, but the server's replies never reach the intended destination network. Replies to packets that come in through the other interface seem to reach their destination without any problems. What can you do that will most likely solve the problem?
    a. Configure a second default gateway on the interface exhibiting problems.
    b. Change the default gateway to use the router that's on the network of the interface exhibiting problems.
    c. Use the `route` command to add routes to the networks that aren't receiving replies.
    d. Replace the NIC that's having problems replying to packets.
23. You have just changed the IP address on a computer named computer5 in your domain from 172.31.1.10/24 to 172.31.1.110/24. You were communicating with this computer from your workstation fine right before you changed the address. Now when you try the command `ping computer5` from your workstation, you don't get a successful reply. Other computers on the network aren't having a problem communicating with the computer. Which command might help solve the problem?
    a. `arp -d`
    b. `ipconfig /flushdns`
    c. `tracert computer5`
    d. `ping -6 172.31.1.110`

24. Which address can't be assigned to a host computer?
    a. 10.100.44.16/24
    b. 172.16.7.255/22
    c. 192.168.100.66/26
    d. 172.29.132.0/18
25. Which IPv6 transition technology can be used with NAT routers and has the address prefix `2001::/32`?
    a. Teredo
    b. ISATAP
    c. 6to4
    d. IPv6-over-IPv4
26. How many bits are in the interface ID of an IPv6 address?
    a. 32
    b. 64
    c. 16
    d. 48
27. What address should you ping if you want to test local IPv6 operation but don't want to actually send any packets on the network?
    a. `1::f`
    b. `2001::db8`
    c. `fe80::ffff`
    d. `::1`