CISCO NETWORKING ACADEMY MODUL 11 – 13

11.1.8

1. Host-A has the IPv4 address and subnet mask 10.5.4.100 255.255.255.0. What is the network address of Host-A?
   10.5.4.0
2. Host-A has the IPv4 address and subnet mask 172.16.4.100 255.255.0.0. What is the network address of Host-A?
   172.16.0.0
3. Host-A has the IPv4 address and subnet mask 10.5.4.100 255.255.255.0. Which of the following IPv4 addresses would be on the same network as Host-A? (Choose all that apply)
   10.5.4.1
   10.5.4.99
4. Host-A has the IPv4 address and subnet mask 172.16.4.100 255.255.0.0. Which of the following IPv4 addresses would be on the same network as Host-A? (Choose all that apply)
   172.16.4.99
   172.16.0.1
5. Host-A has the IPv4 address and subnet mask 192.168.1.50 255.255.255.0. Which of the following IPv4 addresses would be on the same network as Host-A? (Choose all that apply)
   192.168.1.1
   192.168.1.100

11.3.8

1. Which two statements are correct about private IPv4 addresses? (Choose two.)
   Private IPv4 addresses are assigned to devices within an organization's intranet (internal network)
   Any organization (home, school, office, company) can use the 10.0.0.0/8 address
2. Which two statements are correct about public IPv4 addresses? (Choose two.)
   To access a device over the internet, the destination IPv4 address must be a public address
   Public IPv4 address exhaustion is a reason why there are private IPv4 address and why organizations are transitioning IPv6
3. Which organization or group of organizations receives IP addresses from IANA and is responsible for allocating these addresses to ISPs and some organizations?
   RIRs

11.4.4

1. Which devices will not forward an IPv4 broadcast packet by default?
   Router
2. Which two situations are the result of excessive broadcast traffic? (Choose two)
   Slow network operations
   Slow devices operation

11.10.4

1. What is the prefix length notation for the subnet mask 255.255.255.224?
   /27
2. How many valid host addresses are available on an IPv4 subnet that is configured with a /26 mask?
   62
3. Which subnet mask would be used if 5 host bits are available?
   255.255.255.224
4. A network administrator subnets the 192.168.10.0/24 network into subnets with /26 masks. How many equal-sized subnets are created?

4

5. What subnet mask is represented by the slash notation /20?
   255.255.240.0
6. Which statement is true about variable-length subnet masking?
   The size of each subnet may be different, depending on requirements
7. Why does a Layer 3 device perform the ANDing process on a destination IP address and subnet mask?
   To identify the network address of the destination host
8. How many usable IP addresses are available on the 192.168.1.0/27 network?
   30
9. Which subnet mask would be used if exactly 4 host bits are available?
   255.255.255.240
10. Which two parts are components of an IPv4 address? (Choose two.)
    Network portion
    Host portion
11. If a network device has a mask of /26, how many IP addresses are available for hosts on this network?
    62
12. What does the IP address 172.17.4.250/24 represent?
    Host address
13. If a network device has a mask of /28, how many IP addresses are available for hosts on this network?
    14
14. What is the purpose of the subnet mask in conjunction with an IP address?
    To determine the subnet to which the host belongs
15. A network administrator is variably subnetting a network. The smallest subnet has a mask of 255.255.255.224. How many usable host addresses will this subnet provide?
    30

12.1.3

1. What is the most important motivating factor for moving to IPv6?
   Depletion of IPv4 addresses
2. True or False: 4 out of 5 RIRs no longer have enough IPv4 addresses to allocate to customers on a regular basis.
   True
3. Which of the following techniques use native IPv6 connectivity?
   Dual stack

12.3.8

1. What is the recommended prefix length for most IPv6 subnets?
   /64
2. Which part of a GUA is assigned by the ISP?
   Global routing prefix
3. Which type of IPv6 unicast address is not routable between networks?
   LLA
4. True or False: The Subnet ID field in an GUA must borrow bits from the interface ID.
   False
5. What type of IPv6 address begins with fe80?
   LLA

12.5.8

1. True or False. RA messages are sent to all IPv6 routers by hosts requesting addressing information.
   False
2. Which dynamic addressing method for GUAs is the one where devices rely solely on the contents of the RA message for their addressing information?
   Method 1 : SLAAC
3. Which dynamic addressing method for GUAs is the one where devices rely solely on a DHCPv6 server for their addressing information?
   Method 3 : Stateful DHCPv6
4. Which dynamic addressing method for GUAs is the one where devices get their IPv6 configuration in a RA message and request DNS information from a DHCPv6 server?
   Method 2 : SLAAC and Stateless DHCPv6
5. What are the two methods a device can use to generate its own IPv6 interface ID?
   EUI-64
   Randomly generated

12.8.5

1. True or False? IPv6 was designed with subnetting in mind.
   True
2. Which field in an IPv6 GUA is used for subnetting?
   Subnet ID
3. Given a /48 Global Routing Prefix and a /64 prefix, what is the subnet portion of the following address: 2001:db8:cafe:1111:2222:3333:4444:5555
   1111
4. Given a /32 Global Routing Prefix and a /64 prefix, how many bits would be allocated for the Subnet ID?
   32

12.9.4

1. What is the valid most compressed format possible of the IPv6 address 2001:0DB8:0000:AB00:0000:0000:0000:1234?
   2001:DB8:0:AB00::1234
2. What is the prefix associated with the IPv6 address 2001:DB8:D15:EA:CC44::1/64?
   2001:DB8:D15:EA::/64
3. What type of address is automatically assigned to an interface when IPv6 is enabled on that interface?
   Link-local
4. Which IPv6 network prefix is only intended for local links and can not be routed?
   FE80::/10
5. What is the purpose of the command **ping ::1**?
   It tests the internal configuration of an IPv6 host
6. What is the interface ID of the IPv6 address 2001:DB8::1000:A9CD:47FF:FE57:FE94/64?
   A9CD:47FF:FE57:FE94
7. What is the network address for the IPv6 address 2001:DB8:AA04:B5::1/64?
   2001:DB8:AA04:B5::/64
8. Which address type is not supported in IPv6?
   broadcast
9. What is indicated by a successful ping to the ::1 IPv6 address?
   IP is properly installed on the host

10. What is the most compressed representation of the IPv6 address 2001:0db8:0000:abcd:0000:0000:0000:0001?
    2001:db8:0:abcd::1
11. What is the minimum configuration for a router interface that is enabled for IPv6?
    To have a link-local IPv6 address
12. At a minimum, which address is required on IPv6-enabled interfaces?
    Link-local
13. What are three parts of an IPv6 global unicast address? (Choose three.)
    A subnet ID that is used to identify networks inside of the local enterprise site
    An interface ID that is used to identify the local host on the network
    A global routing prefix that is used to identify the network portion of the address that has been provided by an ISP
14. Your organization is issued the IPv6 prefix of 2001:db8:130f::/48 by your service provider. With this prefix, how many bits are available for your organization to create /64 subnetworks if interface ID bits are not borrowed?
    16
15. Which type of IPv6 address is not routable and used only for communication on a single subnet?
    Link-local address

13.1.6

1. Which two types of ICMP messages are common to both ICMPv4 and ICMPv6? (Choose two.)
   Destination of services unreachable
   Time exceeded
2. Which type of ICMPv6 message would a host send to acquire an IPv6 configuration when booting up?
   Router solicitation (RS) message

13.3.4

1. A technician is troubleshooting a network where it is suspected that a defective node in the network path is causing packets to be dropped. The technician only has the IP address of the end point device and does not have any details of the intermediate devices. What command can the technician use to identify the faulty node?
   tracert
2. A user who is unable to connect to the file server contacts the help desk. The helpdesk technician asks the user to ping the IP address of the default gateway that is configured on the workstation. What is the purpose for this **ping** command?
   To test that the host has the capability to reach hosts on other networks
3. What is a function of the **tracert** command that differs from the **ping** command when they are used on a workstation?
   The tracert command shows the information of routers in the path
4. Which ICMP message is used by the traceroute utility during the process of finding the path between two end hosts?
   Time exceeded
5. Which utility uses the Internet Control Messaging Protocol (ICMP)?
   Ping
6. Which protocol is used by IPv4 and IPv6 to provide error messaging?
   ICMP
7. A network administrator is testing network connectivity by issuing the ping command on a router. Which symbol will be displayed to indicate that a time expired during the wait for an ICMP echo reply message?

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8. Which two things can be determined by using the ping command? (Choose two.)
   The destination device is reachable through the network
9. A user calls to report that a PC cannot access the internet. The network technician asks the user to issue the command ping 127.0.0.1 in a command prompt window. The user reports that the result is four positive replies. What conclusion can be drawn based on this connectivity test?
   The TCP/IP implementation is functional
10. Which command can be used to test connectivity between two devices using echo request and echo reply messages?
    Ping
11. What field content is used by ICMPv6 to determine that a packet has expired?
    Hop limit field
12. Which protocol provides feedback from the destination host to the source host about errors in packet delivery?
    ICMP
13. A network administrator can successfully ping the server at www.cisco.com, but cannot ping the company web server located at an ISP in another city. Which tool or command would help identify the specific router where the packet was lost or delayed?
    Traceroute
14. What message is sent by a host to check the uniqueness of an IPv6 address before using that address?
    Neighbor solicitation