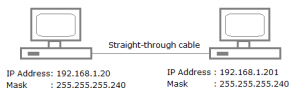
Unit 2

1. Which of the following is not applicable for IP?  
   a) Error reporting  
   b) Handle addressing conventions  
   c) Datagram format  
   d) Packet handling conventions  
   Answer: a  
   Explanation: Error reporting is handled by ICMP.
2. Which of the following field in IPv4 datagram is not related to fragmentation?  
   a) Flags  
   b) Offset  
   c) TOS  
   d) Identifier  
   Answer: c  
   Explanation: TOS-type of service identifies the type of packets.
3. The TTL field has value 10. How many routers (max) can process this datagram?  
   a) 11  
   b) 5  
   c) 10  
   d) 1  
   Answer: c  
   Explanation: TTL field is decremented by one each time the datagram is processed by a router.
4. The value in protocol field is 17, the transport layer protocol used is \_\_\_\_\_\_\_\_\_\_\_\_\_  
   a) TCP  
   b) UDP  
   c) Either of the mentioned  
   d) None of the mentioned  
   Answer: b  
   Explanation: For TCP it is 6.
5. The data field can carry which of the following?  
   a) TCP segemnt  
   b) UDP segment  
   c) ICMP messages  
   d) None of the mentioned  
   Answer: c  
   Explanation: Data field usually has tranaport layer segment, but it can also carry ICMP messages.
6. What should be the flag value to indicate the last fragment?  
   a) 0  
   b) 1  
   c) TTl value  
   d) None of the mentioned  
   Answer: a  
   Explanation: flag=0 indicates that it is the last fragment.
7. Which of these is not applicable for IP protocol?  
   a) is connectionless  
   b) offer reliable service  
   c) offer unreliable service  
   d) none of the mentioned  
   Answer: b  
   Explanation: Ip offers unreliable service.
8. Fragmentation has following demerits  
   a) complicates routers  
   b) open to DOS attack  
   c) overlapping of fragments.  
   d) all of the mentioned  
   Answer: d  
   Explanation: Fragmentation makes the implementation complex and also can create DOS attack.
9. Which field helps to check rearrangement of the fragments?  
   a) offset  
   b) flag  
   c) ttl  
   d) identifer  
   Answer: a  
   Explanation: Offset field specifies where the fragment fits in the original datagram.
10. Which of these is not applicable for IP protocol?  
    a) Connectionless  
    b) Offer reliable service  
    c) Offer unreliable service  
    d) None of the mentioned  
    Answer: b  
    Explanation: IP offers unreliable service.
11. Fragmentation has following demerits  
    a) Complicates routers  
    b) Open to DOS attack  
    c) Overlapping of fragments  
    d) All of the mentioned  
    Answer: d  
    Explanation: Fragmentation makes the implementation complex and also can create DOS attack.
12. Which field helps to check rearrangement of the fragments?  
    a) Offset  
    b) Flag  
    c) TTL  
    d) Identifier  
    Answer: a  
    Explanation: offset field specifies where the fragment fits in the original datagram.
13. In classless addressing, there are no classes but addresses are still granted in  
    a) IPs  
    b) Blocks  
    c) Codes  
    d) Sizes  
    Answer: b  
    Explanation: In classless addressing, there are no classes but addresses are still granted in blocks.
14. In IPv4 Addresses, classful addressing is replaced with  
    a) Classless Addressing  
    b) Classful Addressing  
    c) Classful Advertising  
    d) Classless Advertising  
    Answer: a  
    Explanation: Classful addressing is replaced with classless addressing.
15. First address in a block is used as network address that represents the  
    a) Class Network  
    b) Entity  
    c) Organization  
    d) Codes  
    Answer: c  
    Explanation: First address in a block is used as network address that represents the organization.
16. In classful addressing, a large part of available addresses are  
    a) Organized  
    b) Blocked  
    c) Wasted  
    d) Communicated  
    Answer: c  
    Explanation: In classful addressing, a large part of available addresses are wasted.
17. Network addresses are very important concepts of  
    a) Routing  
    b) Mask  
    c) IP Addressing  
    d) Classless Addressing  
    Answer: c  
    Explanation: Network addresses are very important concepts of IP addressing.
18. Which of this is not a class of IP address?  
    a) ClassE  
    b) ClassC  
    c) ClassD  
    d) ClassF  
    Answer: d  
    Explanation: Class F is not a class of IP addressing.
19. The size of IP address in IPv6 is  
    a) 4bytes  
    b) 128bits  
    c) 8bytes  
    d) 100bits  
    Answer: b  
    Explanation: An IPv6 address is 128 bits long.
20. The header length of an IPv6 datagram is \_\_\_\_\_\_\_\_\_\_\_  
    a) 10bytes  
    b) 25bytes  
    c) 30bytes  
    d) 40bytes  
    Answer: d  
    Explanation: IPv6 datagram has fixed header length of 40bytes, which results is faster processing of the datagram.
21. In the IPv6 header,the traffic class field is similar to which field in the IPv4 header?  
    a) Fragmentation field  
    b) Fast-switching  
    c) ToS field  
    d) Option field  
    Answer: c  
    Explanation: This field enables to have different types of IP datagram.
22. IPv6 doesnot use \_\_\_\_\_\_\_\_\_ type of address  
    a) Broadcast  
    b) Multicast  
    c) Anycast  
    d) None of the mentioned  
    Answer: a  
    Explanation: Broadcast has been eliminated in IPv6.
23. These are the features present in IPv4 but not in IPv6.  
    a) Fragmentation  
    b) Header checksum  
    c) Options  
    d) All of the mentioned  
    Answer: d  
    Explanation: All the features are only present in IPv4 and not IPv6.
24. The \_\_\_\_\_\_\_\_\_ field determines the lifetime of IPv6 datagram  
    a) Hop limit  
    b) TTL  
    c) Next header  
    d) None of the mentioned  
    Answer: a  
    Explanation: The Hop limit value is decremented by one by a router when the datagram is forwaded by the router. When the value becomes zero the datagram is discarded.
25. Dual-stack approach refers to  
    a) Implementing Ipv4 with 2 stacks  
    b) Implementing Ipv6 with 2 stacks  
    c) Node has both IPv4 and IPv6 support  
    d) None of the mentioned  
    Answer: c  
    Explanation: Dual-stack is one of the approach used to support IPv6 in already existing systems.
26. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams but are connected to each other by intervening IPv4 routers. The best solution here is  
    a) Use dual-stack approach  
    b) Tunneling  
    c) No solution  
    d) Replace the system  
    Answer: b  
    Explanation: The IPv4 routers can form a tuunel.
27. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits  
    a) 96 to 127  
    b) 0 to 63  
    c) 80 to 95  
    d) 64 to 79  
    Answer: a  
    Explanation: Bits 96 to 127 in the datagram represents obfuscated 1Pv4 address.
28. Dual-stack approach refers to  
    a) Implementing Ipv4 with 2 stacks  
    b) Implementing Ipv6 with 2 stacks  
    c) Node has both IPv4 and IPv6 support  
    d) None of the mentioned  
    Answer: c  
    Explanation: Dual-stack is one of the approach used to support IPv6 in already existing systems.
29. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams but are connected to each other by intervening IPv4 routers. The best solution here is  
    a) Use dual-stack approach  
    b) Tunneling  
    c) No solution  
    d) Replace the system  
    Answer: b  
    Explanation: The IPv4 routers can form a tunnel.
30. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits  
    a) 96 to 127  
    b) 0 to 63  
    c) 80 to 95  
    d) 64 to 79  
    Answer: a  
    Explanation: Bits 96 to 127 in the datagram represents obfuscated 1Pv4 address.
31. A link local address of local addresses is used in an  
    a) Isolated router  
    b) Isolated mask  
    c) Isolated subnet  
    d) Isolated net  
    Answer: c  
    Explanation: Isolated subnet is very huge sharing network area in this link local address of local addresses is used.
32. subcategories of reserved address in IPv6, address that is used by a host to test itself without going into network is called  
    a) Unspecified address  
    b) Loopback address  
    c) Compatible address  
    d) Mapped address  
    Answer: b  
    Explanation: In subcategories of reserved address in IPv6, address that is used by a host to test itself without going into network is called loop back address.
33. A few leftmost bits in each address of IPv6 address define its category is called  
    a) Prefix type  
    b) Postfix type  
    c) Reserved type  
    d) Local type  
    Answer: a  
    Explanation: Prefix means bits in the IP address are placed in leftmost position.
34. In IPv6 addresses, addresses start with eight 0s are called  
    a) Unicast addresses  
    b) Multicast addresses  
    c) Any cast addresses  
    d) Reserved addresses  
    Answer: d  
    Explanation: In IPv6 address format the starting bits are specified with eight 0s called reserved address.
35. Which statement(s) about IPv6 addresses are true?  
    a) Leading zeros are required  
    b) Two colons (::) are used to represent successive hexadecimal fields of zeros  
    c) Two colons (::) are used to separate fields  
    d) A single interface cannot have multiple IPv6 addresses of different types  
    Answer: b  
    Explanation: In order to shorten the written length of an IPv6 address, successive fields of zeros may be replaced by double colons. In trying to shorten the address further, leading zeros may also be removed. Just as with IPv4, a single device’s interface can have more than one address; with IPv6 there are more types of addresses and the same rule applies. There can be link-local, global unicast, and multicast addresses all assigned to the same interface.
36. When IPV6 launched  
    a) June 2, 2012  
    b) June 4, 2012  
    c) June 5, 2012  
    d) June 6, 2012  
    Answer: d  
    Explanation: None
37. Which of the following is the broadcast address for a Class B network ID using the default subnetmask?  
    a) 172.16.10.255  
    b) 255.255.255.255  
    c) 172.16.255.255  
    d) 172.255.255.255  
    Answer: c  
    Explanation: This address is used for broadcast the class B network purpose
38. have an IP address of 172.16.13.5 with a 255.255.255.128 subnet mask. What is your class of address, subnet address, and broadcast address?  
    a) Class A, Subnet 172.16.13.0, Broadcast address 172.16.13.127  
    b) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.127  
    c) Class B, Subnet 172.16.13.0, Broadcast address 172.16.13.255  
    d) Class B, Subnet 172.16.0.0, Broadcast address 172.16.255.255  
    Answer: b  
    Explanation: Class B is the address of IP code 172.16.13.5
39. If you wanted to have 12 subnets with a Class C network ID, which subnet mask would you use?  
    a) 255.255.255.252  
    b) 255.255.255.255  
    c) 255.255.255.240  
    d) 255.255.255.248  
    Answer: c  
    Explanation: If you have eight networks and each requires 10 hosts, you would use the Class C mask of 255.255.255.240. Why? Because 240 in binary is 11110000, which means you have four subnet bits and four host bits. Using our math, we’d get the following:  
    24-2=14 subnets  
    24-2=14 hosts.
40. The combination of \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ is often termed the local address of the local portion of the IP address.  
    a) Network number and host number  
    b) Network number and subnet number  
    c) Subnet number and host number  
    d) Host number  
    Answer: c  
    Explanation: Sub networking is implemented for remote sensing in transparent way from that a host contains the sub network which called local operation.
41. \_\_\_\_\_\_\_\_\_ implies that all subnets obtained from the same subnet mask.  
    a) Static subnetting  
    b) Dynamic subnetting  
    c) Variable length subnetting  
    d) Both Dynamic subnetting and Variable length subnetting  
    Answer: a  
    Explanation: Static sub network.
42. State whether true or false.  
    i) A connection oriented protocol can only use unicast addresses.  
    ii) The any cast service is included in IPV6.  
    a) True, True  
    b) True, False  
    c) False, True  
    d) False, False  
    Answer: a  
    Explanation: A connection oriented protocol can only use unicast addresses.  
    The any cast service is included in IPV6.
43. \_\_\_\_\_\_\_\_\_\_ is a high performance fiber optic token ring LAN running at 100 Mbps over distances upto 1000 stations connected.  
    a) FDDI  
    b) FDDT  
    c) FDDR  
    d) FOTR  
    Answer: a  
    Explanation: FIBER DISTRIBUTED DATA INTERFACE
44. Which of the following are Gigabit Ethernets?  
    a) 1000 BASE-SX  
    b) 1000 BASE-LX  
    c) 1000 BASE-CX  
    d) all of the above  
    Answer: d  
    Explanation: In computer networking, Gigabit Ethernet (GbE or 1 GigE) is a term describing various technologies for transmitting Ethernet frames at a rate of a gigabit per second (1,000,000,000 bits per second), as defined by the IEEE 802.3-2008 standard. It came into use beginning in 1999, gradually supplanting Fast Ethernet in wired local networks, as a result of being considerably faster.
45. \_\_\_\_\_\_\_\_\_ is a collective term for a number of Ethernet Standards that carry traffic at the nominal rate of 1000 Mbit/s against the original Ethernet speed of 10 Mbit/s.  
    a) Ethernet  
    b) Fast Ethernet  
    c) Gigabit Ethernet  
    d) All of the mentioned  
    Answer: b  
    Explanation: Fast Ethernet
46. \_\_\_\_\_\_\_\_\_ is another kind of fiber optic network with an active star for switching.  
    a) S/NET  
    b) SW/NET  
    c) NET/SW  
    d) FS/NET  
    Answer: a  
    Explanation: A 50-MBd active star fiber optical Local area network (LAN) and its optical combiner and mixing rod splitter are presented. The limited power budget and relatively large tapping losses of light wave technology, which limit the use of fiber optics in tapped bus LAN topologies, are examined and proven tolerable in optical star topologies.
47. A network administrator is connecting hosts A and B directly through their Ethernet interfaces, as shown in the illustration. Ping attempts between the hosts are unsuccessful. What can be done to provide connectivity between the hosts?  
    [](https://www.sanfoundry.com/wp-content/uploads/2016/08/DESIGNING-SUBNET-MASKS-Q1.png)  
    1. A crossover cable should be used in place of the straight-through cable.  
    2. A rollover cable should be used in place of the straight-through cable.  
    3. The subnet masks should be set to 255.255.255.192.  
    4. A default gateway needs to be set on each host.  
    5. The subnet masks should be set to 255.255.255.0.  
    a) 1 only  
    b) 2 only  
    c) 3 and 4 only  
    d) 1 and 5 only  
    Answer: d  
    Explanation: First, if you have two hosts directly connected, as shown in the graphic, then you need a crossover cable. A straight-through cable won’t work. Second, the hosts have different masks, which puts them in different subnets. The easy solution is just to set both masks to 255.255.255.0 (/24).
48. Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router?  
    1. 172.16.1.100  
    2. 172.16.1.198  
    3. 172.16.2.255  
    4. 172.16.3.0  
    a) 1 only  
    b) 2 and 3 only  
    c) 3 and 4 only  
    d) None of the mentioned  
    Answer: c  
    Explanation: The router’s IP address on the E0 interface is 172.16.2.1/23, which is 255.255.254.0. This makes the third octet a block size of 2. The router’s interface is in the 2.0 subnet, and the broadcast address is 3.255 because the next subnet is 4.0. The valid host range is 2.1 through 3.254. The router is using the first valid host address in the range.
49. Which two statements describe the IP address 10.16.3.65/23?  
    1. The subnet address is 10.16.3.0 255.255.254.0.  
    2. The lowest host address in the subnet is 10.16.2.1 255.255.254.0.  
    3. The last valid host address in the subnet is 10.16.2.254 255.255.254.0.  
    4. The broadcast address of the subnet is 10.16.3.255 255.255.254.0.  
    a) 1 and 3  
    b) 2 and 4  
    c) 1, 2 and 4  
    d) 2, 3 and 4  
    Answer: b  
    Explanation: The mask 255.255.254.0 (/23) used with a Class A address means that there are 15 subnet bits and 9 host bits. The block size in the third octet is 2 (256 – 254). So this makes the subnets in the interesting octet 0, 2, 4, 6, etc., all the way to 254. The host 10.16.3.65 is in the 2.0 subnet. The next subnet is 4.0, so the broadcast address for the 2.0 subnet is 3.255. The valid host addresses are 2.1 through 3.254.
50. What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?  
    a) 14  
    b) 15  
    c) 16  
    d) 30  
    Answer: d  
    Explanation: A /27 (255.255.255.224) is 3 bits on and 5 bits off. This provides 8 subnets, each with 30 hosts. Does it matter if this mask is used with a Class A, B, or C network address? Not at all. The number of host bits would never change.
51. . You need to subnet a network that has 5 subnets, each with at least 16 hosts. Wohich classful subnet mask would you use  
    a) 255.255.255.192  
    b) 255.255.255.224  
    c) 255.255.255.240  
    d) 255.255.255.248  
    Answer: b  
    Explanation: You need 5 subnets, each with at least 16 hosts. The mask 255.255.255.240 provides 16 subnets with 14 hosts-this will not work. The mask 255.255.255.224 provides 8 subnets, each with 30 hosts. This is the best answer.
52. You have a network that needs 29 subnets while maximizing the number of host addresses available on each subnet. How many bits must you borrow from the host field to provide the correct subnet mask?  
    a) 2  
    b) 3  
    c) 4  
    d) 5  
    Answer: d  
    Explanation: A 240 mask is 4 subnet bits and provides 16 subnets, each with 14 hosts. We need more subnets, so let’s add subnet bits. One more subnet bit would be a 248 mask. This provides 5 subnet bits (32 subnets) with 3 host bits (6 hosts per subnet). This is the best answer.
53. If an Ethernet port on a router were assigned an IP address of 172.16.112.1/25, what would be the valid subnet address of this host?  
    a) 172.16.112.0  
    b) 172.16.0.0  
    c) 172.16.96.0  
    d) 172.16.255.0  
    Answer: a  
    Explanation: A /25 mask is 255.255.255.128. Used with a Class B network, the third and fourth octets are used for subnetting with a total of 9 subnet bits, 8 bits in the third octet and 1 bit in the fourth octet. Since there is only 1 bit in the fourth octet, the bit is either off or on-which is a value of 0 or 128. The host in the question is in the 0 subnet, which has a broadcast address of 127 since 128 is the next subnet
54. You have an interface on a router with the IP address of 192.168.192.10/29. Including the router interface, how many hosts can have IP addresses on the LAN attached to the router interface?  
    a) 6  
    b) 8  
    c) 30  
    d) 32  
    Answer: a  
    Explanation: A /29 (255.255.255.248), regardless of the class of address, has only 3 host bits. Six hosts is the maximum number of hosts on this LAN, including the router interface.
55. What is the subnetwork number of a host with an IP address of 172.16.66.0/21?  
    a) 172.16.36.0  
    b) 172.16.48.0  
    c) 172.16.64.0  
    d) 172.16.0.0  
    Answer: c  
    Explanation: A /21 is 255.255.248.0, which means we have a block size of 8 in the third octet, so we just count by 8 until we reach 66. The subnet in this question is 64.0. The next subnet is 72.0, so the broadcast address of the 64 subnet is 71.255.
56. The network address of 172.16.0.0/19 provides how many subnets and hosts?  
    a) 7 subnets, 30 hosts each  
    b) 8 subnets, 8,190 hosts each  
    c) 8 subnets, 2,046 hosts each  
    d) 7 subnets, 2,046 hosts each  
    Answer: b  
    Explanation: A CIDR address of /19 is 255.255.224.0. This is a Class B address, so that is only 3 subnet bits, but it provides 13 host bits, or 8 subnets, each with 8,190 hosts.
57. DHCP (dynamic host configuration protocol) provides \_\_\_\_\_\_\_\_\_\_ to the client.  
    a) IP address  
    b) MAC address  
    c) Url  
    d) None of the mentioned  
    Answer: a  
    Explanation: We use DHCP to allow the hosts to acquire their ip addresses dynamically which is better than visiting each and every host on the network and configure all of this information manually.
58. DHCP is used for \_\_\_\_\_\_\_\_  
    a) IPv6  
    b) IPv4  
    c) Both IPv6 and IPv4  
    d) None of the mentioned  
    Answer: c  
    Explanation: DHCP is used for both IPv4 and IPv6 addressing. With DHCP you get to let the hosts know about the change dynamically, and hosts update their info themselves.
59. The DHCP server \_\_\_\_\_\_\_\_\_  
    a) maintains a database of available IP addresses  
    b) maintains the information about client configuration parameters  
    c) grants a IP address when receives a request from a client  
    d) all of the mentioned  
    Answer: d  
    Explanation: Whenever a DHCP server gets a request from a client it responds with a DHCP offer containing IP address being offered, network mask offered, the amount of time that the client can use and keep it, the ip address of the DHCP server making this offer.
60. IP assigned for a client by DHCP server is  
    a) for a limited period  
    b) for an unlimited period  
    c) not time dependent  
    d) none of the mentioned  
    Answer: a  
    Explanation: The IP address offered to a client is only for a limited period of time. There is actually a certain amount of time that the client can use and keep this IP address.
61. DHCP uses UDP port \_\_\_\_\_\_\_\_\_ for sending data to the server.  
    a) 66  
    b) 67  
    c) 68  
    d) 69  
    Answer: b  
    Explanation: 67 is the UDP port number that is used as the destination port of a server. Whereas UDP port number 68 is used by the client.
62. The DHCP server can provide the \_\_\_\_\_\_\_ of the IP addresses.  
    a) dynamic allocation  
    b) automatic allocation  
    c) static allocation  
    d) all of the mentioned  
    Answer: d  
    Explanation: When a host acquires multiple offers of IP addresses from different DHCP servers, the host will broadcast a dhcp request identifying the server whose offer has been accepted.
63. DHCP client and servers on the same subnet communicate via \_\_\_\_\_\_\_\_\_  
    a) UDP broadcast  
    b) UDP unicast  
    c) TCP broadcast  
    d) TCP unicast  
    Answer: a  
    Explanation: DHCP actually employs a connectionless service, which is provided by UDP, since TCP is connection oriented. It is implemented with two UDP port numbers 67 and 68 for its operations.
64. After obtaining the IP address, to prevent the IP conflict the client may use \_\_\_\_\_\_\_\_\_  
    a) internet relay chat  
    b) broader gateway protocol  
    c) address resolution protocol  
    d) none of the mentioned  
    Answer: c  
    Explanation: ARP abbreviation for address resolution protocol is used for mapping IP addresses to MAC addresses that are present in the local network.
65. What is DHCP snooping?  
    a) techniques applied to ensure the security of an existing DHCP infrastructure  
    b) encryption of the DHCP server requests  
    c) algorithm for DHCP  
    d) none of the mentioned  
    Answer: a  
    Explanation: DHCP snooping is a security feature that is used in OS of a network in the layer 2. This technology prevents unauthorized DHCP servers offering IP addresses to DHCP clients.
66. If DHCP snooping is configured on a LAN switch, then clients having specific \_\_\_\_\_\_ can access the network.  
    a) MAC address  
    b) IP address  
    c) Both MAC address and IP address  
    d) None of the mentioned  
    Answer: c  
    Explanation: The DHCP snooping is done to prevent unauthorized IP addresses being offered by unauthorized servers. This features allows only specific mac addresses and IP addresses to access the network.
67. Physical or logical arrangement of network is \_\_\_\_\_\_\_\_\_\_  
    **a) Topology**b) Routing  
    c) Networking  
    d) None of the mentioned
68. In which topology there is a central controller or hub?  
    **a) Star**b) Mesh  
    c) Ring  
    d) Bus
69. This topology requires multipoint connection  
    a) Star  
    b) Mesh  
    c) Ring  
    **d) Bus**
70. Data communication system spanning states, countries, or the whole world is \_\_\_\_\_\_\_\_  
    a) LAN  
    **b) WAN**c) MAN  
    d) None of the mentioned
71. Data communication system within a building or campus is\_\_\_\_\_\_\_\_  
    **a) LAN**b) WAN  
    c) MAN  
    d) None of the mentioned
72. Expand WAN?  
    a) World area network  
    **b) Wide area network**c) Web area network  
    d) None of the mentioned
73. In TDM, slots are further divided into \_\_\_\_\_\_\_\_\_\_  
    a) Seconds  
    **b) Frames**c) Packets  
    d) None of the mentioned
74. Multiplexing technique that shifts each signal to a different carrier frequency  
    **a) FDM**b) TDM  
    c) Both FDM & TDM  
    d) None of the mentioned