Homework1 for 09/16/02

P42:

1. Why was the OSI model developed?
   a. Manufacturers disliked the TCP/IP protocol suite
   b. The rate of data transfer was increasing exponentially
   c. Standards were needed to allow any two systems to communicate
   d. None of the above

2. The ____ model shows how the network functions of a computer ought to be organized.
   a. CCITT
   b. OSI
   c. ISO
   d. ANSI

3. The physical layer is concerned with the transmission of ____ over the physical medium.
   a. programs
   b. dialogs
   c. protocols
   d. bits

Homework2 for 09/23/02

P112:

1. Identify the class of the following IP address: 4.5.6.7.
   a. class A
   b. class B
   c. class C
   d. class D

2. Identify the class of the following IP address: 229.1.2.3.
   a. class A
   b. class B
   c. class C
   d. class D

3. Identify the class of the following IP address: 191.1.2.3.
   a. class A
   b. class B
   c. class C
   d. class D

4. Identify the following IP address: 169.5.0.0.
   a. host IP address
   b. direct broadcast address
   c. limited broadcast address
   d. network address

5. Identify the following IP address: 169.5.1.1.
   a. host IP address
   b. direct broadcast address
   c. limited broadcast address
   d. network address

P115:

21. What is the address space in each of the following systems?
   a. a system with 8-bit addresses (2^8)
   b. a system with 16-bit addresses (2^{16})
   c. a system with 64-bit addresses (2^{64})

22. An address space has a total of 1,024 addresses. How many bits are needed to represent an address? (10)

28. Change the following IP addresses from binary notation to dotted-decimal notation:
    a. 01111111 11110000 01100111 01111101 (127.240.103.125)
    b. 10101111 11000000 11111000 00011101 (175.192.248.29)
    c. 11011111 10110000 00011111 01011101 (223.176.31.93)
    d. 11101111 11110111 11000111 00011101 (239.247.199.29)
    e. 11110111 11110011 10000111 11011101 (247.243.135.221)

Homework3 for 09/30/02

P163:

1. In ____ delivery, both the deliverer of the IP packet and the destination are on the same network.
   a. A connectionless
   b. A connection-oriented
   c. A direct
   d. An indirect

2. In ____ delivery, the deliverer of the IP packet and the destination are on different networks.
   a. A connectionless
   b. A connection-oriented
   c. A direct
   d. An indirect

3. In ____ delivery, packets of a message are logically connected to one another.
   a. A connectionless
   b. A connection-oriented
   c. A direct
   d. An indirect

4. In ____ delivery, a packet is not connected to any other packet.
   a. A connectionless
   b. A connection-oriented
   c. A direct
   d. An indirect

P165:

17. A host with IP address 137.23.56.23 sends a packet to a host with IP address 137.23.67.9. Is the delivery direct or indirect? Assume no subnetting. (direct)

18. A host with IP address 137.23.56.23 sends a packet to a host with IP address 142.3.6.9. Is the delivery direct or indirect? Assume no subnetting. (indirect)

P166:

40. Find the topology of the network if Table 6.5 is the routing table for router R1.

Table 6.5

Mask	Destination	Next Hop	F.	R.C.	U.	I.
255.255.192.0	145.23.129.7	----	U	0	0	m0
255.255.255.224	202.14.17.193	----	U	0	0	m1
0.0.0.0	0.0.0.0	130.56.12.4	U	0	0	m2

Notes(from prof. ott):

I think there is an error in problem 40 on page 166.

There does not exist an address which, if ANDed with 255.255.192.0, gives 145.23.129.7.
Also, there is no address which, if ANDed with 255.255.255.224, gives 202.14.17.193.

145.23.129.7/18 is empty. 202.14.17.193/27 is empty.

Notes(from lijuan):
If we change the destionation address from 145.23.129.7 to 145.23.128.0, from 202.14.17.193 to 202.14.17.192, we get the following topology.