**CSCI 2930: Practical System Administration**

**Lab 2**

**Spring 2014**

1. All computers function using the \_\_\_\_\_\_\_\_\_\_.
   1. Base-10 system
   2. Decimal system
   3. Numeric system
   4. Binary system
2. The decimal number 10 converts to the binary number \_\_\_\_\_\_\_\_\_\_\_\_.
   1. 10
   2. 1010
   3. 110
   4. 1000
3. Which of the following binary octets has a LSB of 0?
   1. 01100011
   2. 10100101
   3. 10011010
   4. 10011001
4. IP addresses are represented using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   1. 32-bit binary numbers
   2. 16-bit decimal numbers
   3. 8-bit binary numbers
   4. 8 sets of 4-bit decimal numbers
5. 2 to the 5th power is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
   1. 2 X 5
   2. 128
   3. 2 multiplied by itself 5 times
   4. None of the above
6. The decimal number 205 converted into a binary number is \_\_\_\_\_\_\_\_\_\_\_\_.
   1. 11011101
   2. 11001001
   3. 11000101
   4. 11001101
7. The binary number 11000111 converted into a decimal number is \_\_\_\_\_\_\_.
   1. 218
   2. 199
   3. 179
   4. 208
8. The binary number 1110100011 converted into a decimal number is 931.
   1. ~~1183~~
   2. ~~1873~~
   3. ~~1638~~
   4. ~~1863~~
9. The IP address consists of two parts: \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_.
   1. Network portion, host portion
   2. Host portion, MAC portion
   3. Network portion, MAC portion
   4. Network portion, subnet portion
10. How many bits are in an IP address?
    1. 16
    2. 32
    3. 48
    4. 64
11. In a Class B address, which of the octets are the host address portion and are assigned locally?
    1. The first octet is assigned locally
    2. The first and second octets are assigned locally
    3. The second and third octets are assigned locally
    4. The third and fourth octets are assigned locally
12. The address 172.168.128.17 is of which class?
    1. Class A
    2. Class B
    3. Class C
    4. Class D
13. How many octets does a Class A network have in the host field?
    1. 3
    2. 2
    3. 1
    4. 4
14. How many host addresses can be used in a Class C network?
    1. 253
    2. 254
    3. 255
    4. 256
15. A subnet mask tells the router to look at what portion of an IP address?
    1. Mask and host bits
    2. Host and network bits
    3. Host and subnet bits
    4. Network and subnet bits
16. Which of the following subnet masks falls on octet boundaries?
    1. 255.255.0.0
    2. 255.0.0.0
    3. 255.255.255.0
    4. All of the above
17. Which part of the IP address 172.17.128.47 does the subnet mask 255.255.0.0 tell the router to look for?
    1. 172.17.128.47
    2. 172.17.128
    3. 172.17
    4. 10.172.47
18. 255.255.224.0 translated into the binary format equals \_\_\_\_\_.
    1. 11111111.00000000.11100000.00000000
    2. 11111111.11100000.00000000.00000000
    3. 11111111.11111111.11100000.00000000
    4. 11111111.11111111.11110000.00000000
19. Convert the binary number 1100010 to a decimal number. 98
20. Convert the binary number 01110001.10001000.01101101.00001010 to a dotted decimal number. 113.136.109.10
21. Convert the decimal number 17 to a binary number. 10001
22. Given an IP address of 11010010.00010110.10101111.00101000 and a subnet mask of 11111111.11111111.11111111.11100000, calculate the subnet address and represent it in dotted decimal format. 210.22.175.32
23. Given the following IP address, calculate the subnet address, the first and last hosts, the broadcast address, and the number of bits in the mask in /x format

172.16.5.89 255.255.255.224

Subnet First Host Last Host Broadcast # of bits /x format

172.16.5.64 172.16.5.65 172.16.5.95 172.16.5.96 /27

1. Given the following IP address, calculate the subnet address, the first and last hosts, the broadcast address, and the number of bits in the mask in /x format

192.168.23.197 255.255.255.240

Subnet First Host Last Host Broadcast # of bits /x format

192.168.23.192 192.168.23.193 192.168.23.206 192.168.23.207 /28

1. Given the following IP address, calculate the subnet address, the first and last hosts, the broadcast address, and the number of bits in the mask in /x format

172.23.145.238 255.255.248.0

Subnet First Host Last Host Broadcast # of bits /x format

172.23.144.0 172.23.144.1 172.23.151.254 172.23.151.255 /21

1. Given the following IP address, calculate the subnet address, the first and last hosts, the broadcast address, and the number of bits in the mask in /x format

10.123.97.43 255.255.128.0

Subnet First Host Last Host Broadcast # of bits /x format

10.123.0.0 10.123.0.1 10.123.127.254 10.123.127.255 /17

1. Given the following IP address, calculate the subnet address, the first and last hosts, the broadcast address, and the number of bits in the mask in /x format

192.168.23.168 255.255.255.192

Subnet First Host Last Host Broadcast # of bits /x format

192.168.23.128 192.168.23.129 192.168.23.190 192.168.23.191 /26