IP Addressing Questions

1. The subnet mask for a particular network is 255.255.31.0. Which of the following pairs of IP addresses could belong to this network?
   a) 172.57.88.62 and 172.56.87.233
   b) 10.35.28.2 and 10.35.29.4
   c) 191.203.31.87 and 191.234.31.88
   d) 128.8.129.43 and 128.8.161.55

2. An organization has a class B network and wishes to form subnets for 64 departments. The subnet mask would be:
   a) 255.255.0.0
   b) 255.255.64.0
   c) 255.255.128.0
   d) 255.255.252.0

3. The routing table of a router is shown below:

Destination	Subnet Mask	Interface
128.75.43.0	255.255.255.0	Eth0
128.75.43.0	255.255.255.128	Eth1
192.12.17.5	255.255.255.255	Eth3
Default		Eth2

   On which interface will the router forward packets addressed to destinations 128.75.43.16 and 192.12.17.10

   a) Eth1 and Eth2
   b) Eth0 and Eth2
   c) Eth0 and Eth3
   d) Eth1 and Eth3

4. A company has a class C network address of 204.204.204.0. It wishes to have three subnets, one with 100 hosts and two with 50 hosts each. Which one of the following options represents a feasible set of subnet address/subnet mask pairs?

   a) 204.204.204.128 / 255.255.255.192
      204.204.204.0 /255.255.255.128
      204.204.204.64 /255.255.255.128

b)

204.204.204.0 / 255.255.255.192
204.204.204.192/255.255.255.128
204.204.204.64/255.255.255.128

c)

204.204.204.128 / 255.255.255.128
204.204.204.192 /255.255.255.192
204.204.204.224 /255.255.255.192

d)

204.204.204.128 / 255.255.255.128
204.204.204.64/255.255.255.192
204.204.204.0 /255.255.255.192

5. A sub-netted class B network has the following broadcast address: 144.16.95.255. Its subnet mask

a) is necessarily 255.255.224.0
b) is necessarily 255.255.240.0
c) is necessarily 255.255.248.0
d) Could be any one of 255.255.224.0 , 255.255.240.0 and 255.255.248.0

6. Two computers C1 and C2 are configured as follows. C1 has IP address 203.197.2.53 and net mask 255.255.128.0. C2 ha IP address 203.197.75.201 and net mask 255.255.192.0 which one of the following statements are true

   a) C1 and C2 both assume they are on the same network.
   b) C2 assumes C1 is on same network, but C1 assumes C2 is on a different network.
   c) C1 assumes C2 is on same network, but C2 assumes C1 is on a different network.
   d) C1 and C2 both assume they are on different networks.

7. The address of a class B host is to be split into subnets with 6-bit subnet number. What is the maximum number of subnets and maximum number of hosts in each subnet.
   a) 62 subnets and 262142 hosts
   b) 64 subnets and 262142 hosts
   c) 62 subnets and 1022 hosts
   d) 64 subnets and 1024 hosts.
8. If a class B network on the Internet has a subnet mask of 255.255.248.0. what is the maximum number of hosts per subnet.
   a) 1022.

b) 1023.
c) 2046.
d) 2047.

9. A host is connected to a Department network which is part of a University network. The University network, in turn, is part of the Internet. The largest network in which the Ethernet address of the host is unique:
   a) The subnet to which the host belongs
   b) The Department network.
   c) The University network.
   d) The Internet.
10. A subnet has been assigned a subnet mask of 255.255.255.192. What is the maximum number of hosts that can belong to this subnet:

    a) 14
    b) 30
    c) 62
    d) 126
11. Suppose a subnet X has a subnet mask 255.255.255.192 and a system A has IP 130.127.48.130. Which of the following belongs to same subnet as A

    a) 130.127.48.120
    b) 130.127.48.187
    c) Both (a) and (b)
    d) None of these

12. The router uses the following routing table-

Destination	Mask	Interface
144.16.0.0	255.255.0.0	Eth0
144.16.64.0	255.255.224.0	Eth1
144.16.68.0	255.255.255.0	Eth2
144.16.68.64	255.255.255.224	Eth3

    A packet bearing a destination address 144.16.68.117 arrives at the router. On which interface will it be forwarded?
    a) Eth0
    b) Eth1
    c) Eth2
    d) Eth3

13. For each of the following given IP and subnet mask (sm) find-

    i) Number of subnets available

ii) Subnet ids

iii) Number of hosts available in each subnet

iv) Direct Broadcast Address for each subnet

a) IP : 192.192.192.200
sm: 255.255.255.128

b) IP: 192.192.192.200
sm: 255.255.255.240

c) IP: 192.192.192.200
sm: 255.255.255.15

d) IP: 150.100.100.100
sm: 255.255.255.0

e) IP: 150.100.100.100
sm: 255.255.128.128

e) IP: 192.55.12.120
sm: 255.255.255.240

f) IP: 128.12.34.71
sm: 255.255.255.0

14. In an organization that uses class C n/w, require 14 subnets each with 10 systems. Propose a suitable subnet mask-

15. Let computer A and B have IP address 10.105.1.113 and 10.105.1.91 respectively and both use same subnet mask N, then which of the following values of N should not be used if A and B are in the same n/w

a) 255.255.255.0
b) 255.255.255.128
c) 255.255.255.192
d) 255.255.255.224