

# Computer Network

## IPv4 Addressing

[NAT]

1. After subnetting how many steps are needed to communicate with process?\_\_\_\_\_

**[MCQ]**

- 2.** Consider the following statements:

**S<sub>1</sub>:** Subnetting was devised to divide a large block (Network) into smaller ones.

**S<sub>2</sub>:** Subnetting was devised to combine several class C blocks into a large block.

Which of the following is/are correct?

- (a)  $S_1$  only                      (b)  $S_2$  only  
(c) Both  $S_1$  and  $S_2$             (d) None of these

**[MCQ]**

- 3.** Consider the following statements:

**S<sub>1</sub>:** In Subnetting subnet bits are borrowed from host ID part.

**S<sub>2</sub>:** In Subnetting subnet bits are borrowed either from HID part or from NID part.

**S<sub>3</sub>:** Subnetting provides security to one network from another network.

Which of the following is/are correct?

- (a)  $S_1$  and  $S_2$       (b)  $S_1$  and  $S_3$   
(c)  $S_2$  and  $S_3$       (d) All are correct

**[MSQ]**

4. Which of the following is/are correct statement?

- (a) First subnet ID and entire network ID is always same.
- (b) Last subnet ID and entire network ID is always same.
- (c) DBA of the first subnet and DBA of entire network is always same.
- (d) DBA of the last subnet and DBA of entire network is always same.

[MSQ]

5. Consider a subnet mask 255. 255.255.192, the number of subnets is/are possible:

- (a)  $2^{18}$  (b)  $2^{18}-2$   
(c)  $2^2$  (d)  $2^7-2$

## Answer Key

- |        |           |
|--------|-----------|
| 1. (4) | 4. (a, d) |
| 2. (a) | 5. (a, c) |
| 3. (b) |           |



## Hints & Solutions

1. (4)

Subnetting complicates the communication process. Instead of the 3step procedure now it becomes 4 step procedure.

- (1) Identify the network.
- (2) Identify the subnet with in the network.
- (3) Identify the host with in the subnet.
- (4) Identify the process with in the host.

2. (a)

The process of divide a big network into many smaller subnets is called as subnetting.

Hence, option (a) corrects.

3. (b)

- In subnetting subnet bits are borrowed from HID part only.
- Subnetting provides security to one network from another network.

Hence, option (b) is correct.

4. (a, d)

- First subnet ID and entire network ID is same.
- DBA of the last subnet and DBA of entire network is same.

Hence, (a, d) are correct.

5. (a, c)

Subnet mask = 225.225.255.192

Subnet mask = 11111111. 11111111. 11111111. 11000000

Number of 1's = 26

- If given subnet mask is of class A then,
- Number of subnet bits =  $26 - 8 = 18$
- Number of subnets =  $2^{18}$
- If given subnet mask is of class B then,
- Number of subnet bits =  $26 - 16 = 10$  bits
- Number of subnets =  $2^{10}$
- If given subnet mask is of class C then,
- Number of bits =  $26 - 24 = 2$
- Number of subnet =  $2^2 = 4$

Number of subnets =  $2^2$ ,  $2^{10}$  and  $2^{18}$  are possible.

Hence, option (a, c) are correct.



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