Tutorial-05-CN

U19CS009

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Q-1

a) 238.34.2.1

$(238)_{10} = (11101110)_2$

=> implies class D

b) 129.14.6.8

$(129)_{10} = (10000001)_2$

=> class B

Q-2 Last IP address of given block 25.34.255.255/16

(IP) AND (MASK) = First address

00011001 00100010 11111111 11111111

AND

11111111 11111111 00000000 00000000

00011001 00100010 00000000 00000000

$(25)_{10}$ $(34)_{10}$ $(0)_{10}$ $(0)_{10}$

∴ Frist address = 25.34.0.0/16

Q-3 First IP address of given block : 211.17.180.0/24

(IP) OR (Complement of Mask) = LAST Address

11010011 00010001 10110100 00000000

OR

00000000 00000000 00000000 11111111

11010011 00010001 10110100 11111111

∴ Last address = 211.17.180.255/24

Q-4

IP address ⇒ 201.54.105.16/26

A) First address = (IP) AND (MASK)

⇒ 11001001 00110110 01101001. 00010000

AND 11111111 11111111 11111111 11000000

11001001 00110110 01101001 00000000

∴ first address = 201.54.105.0/26

B) LAST Address = ~~(IP)~~ can be obtained by making all bits in host field (last 6 bits) as 1 in first address.

11001001.00110110. 01101001.00111111

∴ last address = 201.54.105.63/26

C) Total address. $= 2^{32 - \text{bits of mask}}$

$= 2^{32-26}$

$= 2^6$

$= 64$

D) Total no. of usable IP $= 2^6 - 2 = 64 - 2 = 62$

First address is reserved for network id and last address is reserved for network broadcast id.