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Subject :- OCW

Assignment No. :- Lab 2

Sec. No. :- 4

Q1. Host X IP address :- 11.110.2.112

Binary :- 00001011.01101110.00000010.01110000

Host Y IP address :- 11.110.2.92

Binary :- 00001011.01101110.00000010.01100000

In option 3).

Ans. IP address :- 225.225.225.192

Binary :- 11100001.11100001.11111111.11000000

AND with X :- 00000001.01100000.00000010.01000000

AND with Y :- 00000001.01100000.00000010.01000000

as AND of both same option 3) is can used.

Q2. Option 2) 30

Last 5 bit of IP address used for host

$\therefore 2^5 = 32$ possible host

but 2 are reserved as network and broadcast

address $\therefore 32 - 2 = 30$

$\therefore 30$ maximum number of host belong to this subnet

Q3 → option 4) . 32 subnets and 2046 Host.

$$\therefore \text{number of subnets} = 2^n = 2^5 = 32$$

$$\text{number of hosts} = 2^m - 2 = 2^8 - 2 = 2046$$

20 left subnetting left with 11 left for host.
(16-5=11)

Q4 → option 1) C₁ and C₂ both assume they are on same ~~different~~ network.

To find whether 2 device are on same network, we need to compare IP and subnet mask.

In this both has same subnet mask

C₁ IP address :- 142.16.128.0

Binary :- 10001110.00010100.10000000.00000000

Subnet mask :- 255.255.240.0

Binary :- 11111111.11111111.11110000.00000000

AND operation :- 10001110.00010000.10000000.00000000

C₂ IP address :- 142.16.136.0

Binary :- 10001110.00010000.10001000.00000000

Subnet mask :- 255.255.240.0

Binary :- 11111111.11111111.11110000.00000000

AND operation :- 10001110.00010000.10001000.00000000

As AND operation is ~~different~~ same.

Q5 → option 3) 510

Subnet mask of 255.255.254.0 has 23 bit allocated to subnet which leaves 9 left for host.

$$\therefore \text{maximum number of host} = 2^m - 2$$

$$= 2^9 - 2 = 512 - 2$$

$$= 510$$

We subtracted 2 due to 2 are reserved for network and broadcast.