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22-49671-2

There are subnets and 1050 hosts per subnet.

[IP Address for different classes; C: 192.168.10.0, class B: 172.16.0.0, class A: 10.0.0.0]

i) which class of IP will be used?

ii) what will be the prefix?

iii) what will be the network ip Address of 117th subnet?

iv) what will be the ip Address of 1680th host of 117th subnet?

1. here,

i) 1050 hosts per subnet

124 subnets

we know, $2^{11} = 2046 \geq 1050$

so, we need 11 bit for hosts.

for, 124 subnets

$2^7 = 128 \geq 124$

so, we need 7 bits for subnetting

subnet + hosts bit = 7 + 11 = 18 bits

But class B has 16 bits for subnet + hosts and class C has 8 bits u subnet + hosts.

class A has 24 bits for subnet + hosts.

so. class A of IP will be used.

class A of IP is = 10.0.0.0

ii) we get,

Subnet bit = 7

network bit = 8

prefix = subnet + network bit

= 7 + 8

= 15 bits

∴ prefix = /15 bits.

iii) A Class A will be used.

IP = 10.0.0.0

10 . 0 . 0 . 0

00001010 . 00000000 . 00000000 . 00000000

sssssssh hhhh hhhh hhhh hhhh

N

for network IP Address 117th subnet,

128	64	32	16	8	4	2	1	
0	1	1	1	0	1	0	1	$= (117)_{10}$

So, now the IP is

10.11101010.00000000.00000000

10. 234.0.0

So. the network IP Address for 117th subnet is

10. 234.0.0

iv) 117th subnet IP =

10.234.0.0

10.234.00000000.00000000

for 1680th host

1024	512	256	128	64	32	16	8	4	2	1	
1	1	0	1	0	0	1	0	0	0	0	= 1680

So. now the IP will be,

10.234.00000110.10010000

10. 234. 6. 144

For 1680th host and 1178th subnet the IP Address will be = 10.234.6.144 Ans