

LATS - PRAC - 10.

① (ii) IP : 8.1.4.5 /16

class - A [0 - 127]

Default subnet Mask \rightarrow 255.0.0.0

Subnet Mask \rightarrow 255.255.0.0

Network bit \rightarrow 16

Host bit \rightarrow 16

host per subnet $\rightarrow 2^{16} - 2 = 2^{16} - 2 = 65534$

subnet no. / borrowed bit $\rightarrow 8$

total no. of subnet $\rightarrow 2^8 = 256$

Block size $= 256 - 255 = 1$

1st valid IP add. \rightarrow 8.1.0.1

last valid IP add. \rightarrow 8.1.255.254

Broadcast add. \rightarrow 8.1.255.255

(iii) IP : 130.4.102.1 /24

class - B [128 - 191]

Default subnet mask \rightarrow 255.255.0.0

Subnet mask \rightarrow 255.255.255.0

Network bit \rightarrow 24

Host bit \rightarrow 8

host per subnet $\rightarrow 2^8 - 2 = 254$

subnet no. $\rightarrow 8$

total no. of subnet $\rightarrow 2^8 = 256$

1st valid IP add. \rightarrow 130.4.102.1

last valid IP add. \rightarrow 130.4.102.254

Broadcast add. \rightarrow 130.4.102.255

(iii) IP : 130.4.102.1 / ~~22~~ 22

class - B

default subnet mask \rightarrow 255.255.0.0

subnet mask \rightarrow 255.255.252.0

Network bit \rightarrow 22

Host bit \rightarrow 10

Host per subnet $\rightarrow 2^{10} - 2 = 1022$

subnet no. \rightarrow 6

total no. of subnet $\rightarrow 2^6 = 64$

1st valid IP add. \rightarrow 130.4.100.1

last valid IP add. \rightarrow 130.4.103.254

Broadcast add. \rightarrow 130.4.103.255

Block size $\rightarrow 256 - 252 = 4$

(iv) IP : 199.1.1.100 / ~~24~~ 24

class - C [192-223]

default subnet mask \rightarrow 255.255.255.0

subnet mask \rightarrow 255.255.255.0

Network bit \rightarrow 24

Host bit \rightarrow 8

Host per subnet $\rightarrow 2^8 - 2 = 254$

subnet no. \rightarrow 0

total no. of subnet $\rightarrow 2^0 = 1$

1st valid IP add. \rightarrow 199.1.1.1

last valid IP add. \rightarrow 199.1.1.254

Broadcast add. \rightarrow 199.1.1.255



(1) class - C

Default subnet mask \rightarrow 255.255.255.0 /24Given IP add. \rightarrow 192.168.17.9No. of add. $\rightarrow 2^{\text{host bit}} = 2^8 = 256$ 1st add. \rightarrow 192.168.17.1last add. \rightarrow 192.168.17.254.(2) Given IP add. \rightarrow 185.28.17.9 (classfull)

class - B

Subnet Mask \rightarrow 255.255.0.0No. of add. $\rightarrow 2^{16} = 65536$ 1st add. \rightarrow 185.28.17.1last add. \rightarrow 185.28.255.254

(3) class - C

Given IP add. \rightarrow 205.16.37.39 /28Default subnet mask \rightarrow 255.255.255.0Subnet mask \rightarrow 255.255.255.240Subnet no. / subnet mask $\rightarrow 4$ Total no. of subnet $\rightarrow 2^7 = 16$ (No. of add. in block)Block size $\rightarrow 256 - 240 = 16$ 1st add. \rightarrow 205.16.37.33last add. \rightarrow 205.16.37.46

⑤ IP : 216.21.5.0

class - C [192 - 223]

Default subnet mask \rightarrow 255.255.255.0

subnet mask \rightarrow 255.255.255.284

No. of host per subnet \rightarrow $30 = 2^{\text{host bit}} - 2$

Network bit \rightarrow 27 host bit \rightarrow 5

bit borrowed / subnet no. \rightarrow 3

Total no. of subnet $\rightarrow 2^3 = 8$

Block size $\rightarrow 256 - 224 = 32$

Network ranges \rightarrow : 216.21.5.0 \rightarrow 216.21.5.31

216.21.5.32 \rightarrow 216.21.5.63

216.21.5.64 \rightarrow 216.21.5.95

216.21.5.96 \rightarrow 216.21.5.127

216.21.5.128 \rightarrow 216.21.5.159

216.21.5.160 \rightarrow 216.21.5.191

216.21.5.192 \rightarrow 216.21.5.223

216.21.5.224 \rightarrow 216.21.5.255.

⑥ IP : 192.10.20.0

class - C

Default subnet mask \rightarrow 255.255.255.0

subnet mask : 255.255.255.192

No. of host per subnet $= 52 = 2^{\text{host bit}} - 2$

$(2^6 = 64) \therefore \text{host bit} = 6$

Network bit : 26

Bit borrowed / subnet no. \rightarrow 2

Total no. of subnet $\rightarrow 2^1 = 4$

Block size $\rightarrow 256 - 192 = 64$



Network ranges : $192.10.20.0 \rightarrow 192.10.20.63$
 $192.10.20.64 \rightarrow 192.10.20.127$
 $192.10.20.128 \rightarrow 192.10.20.191$
 $192.10.20.192 \rightarrow 192.10.20.255$.

⑦ Device A : 172.16.17.30 / 20

Device B : 172.16.28.15 / 20

/20 : 255.255.240.0

$$\text{Block size} = 2^{(32-20)} = 2^8 \\ = 4096$$

Device A :

subnet : 172.16.16.0

Range : 172.16.16.0 — 172.16.31.255

subnet mask : 255.255.240.0

Device B :

subnet : 172.16.16.0

Range : 172.16.16.0 — 172.16.31.255

subnet mask : 255.255.240.0