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Ans to the Q-01

78·0·0·0 → This is class A.

78	0	0	0
78	00000000|0	00000000	00000000
Broadcast subnet of 10th subnet (address)	00001010|1	11111111	11111111
1st host of 5th subnet	00000101|0	00000000	00000001
last host of 5th subnet	0000101|1	11111111	11111110
11 ---- 11	1111111|0	00000000	00000000

(b) Broadcast address of the 10th subnet = 78·21·255·255

(c) 1st host of 5th subnet : 78·10·0·1

last host of 5th subnet: 78·11·255·254

(a) subnet mask in decimal notation: 255·254·0·0

Ans to the Q-02

152.140.132.173 / 22 → This is class B

152	140	132	172
152	140	00000000	00000000

1st subnet broad cast .... 000001|11 ... 11111111

Last " " .... 111110|11 ... 11111111

1st host IP of the 8th subnet ... 001000|11 ... 11111110

(a) Number of usable subnets possible within the networks

$$2^{10} - 2 = \cancel{1024-2} = \cancel{1022}$$
$$= 62$$

(b) 1st and Last subnets broadcast IP: 152.140.7.255

152.140.251.255

(c) Last host IP of the 8th subnet: 152.140.35.254

Ans to the Q-4

Source to destination : J → M

J's neighbors are → A, I, H, K, N

Echo PACKETS:

JA : 10 ms

JI : 19 ms

JH : 16 ms

JK : 18 ms

JN : 12 ms

∴ we can see that

J→A, J→H, J→N of these 3 are the same shortest path to reach from J to M.

Now,

JM = JA + AM = 10 + 14 = 24 msec

JM = JI + IM = 19 + 6 = 25 msec

JM = JH + HM = 16 + 21 = 37 msec

JM = JK + KM = 18 + 6 = 24 msec

JM = JN + NM = 12 + 12 = 24 msec

~ Ans to the Q-5

Destination Host : 192. 163. 135. 250

Main routre : 142 . 163. 200. 245 / 22

Now, This is a eat class B IP and subnet mask

offer . 22 bits

Network IP
_____

142	163	000000 0 00	00000 0 0 0
11111111	11111111	1111111	00	00000000

So, subnet mask IP: 255·255. 252·0

Now,

subnet mask IPs 11111111 11111111 11111100 00000000

Host IP   : 10001110 10100011 10000111 11111010
_____

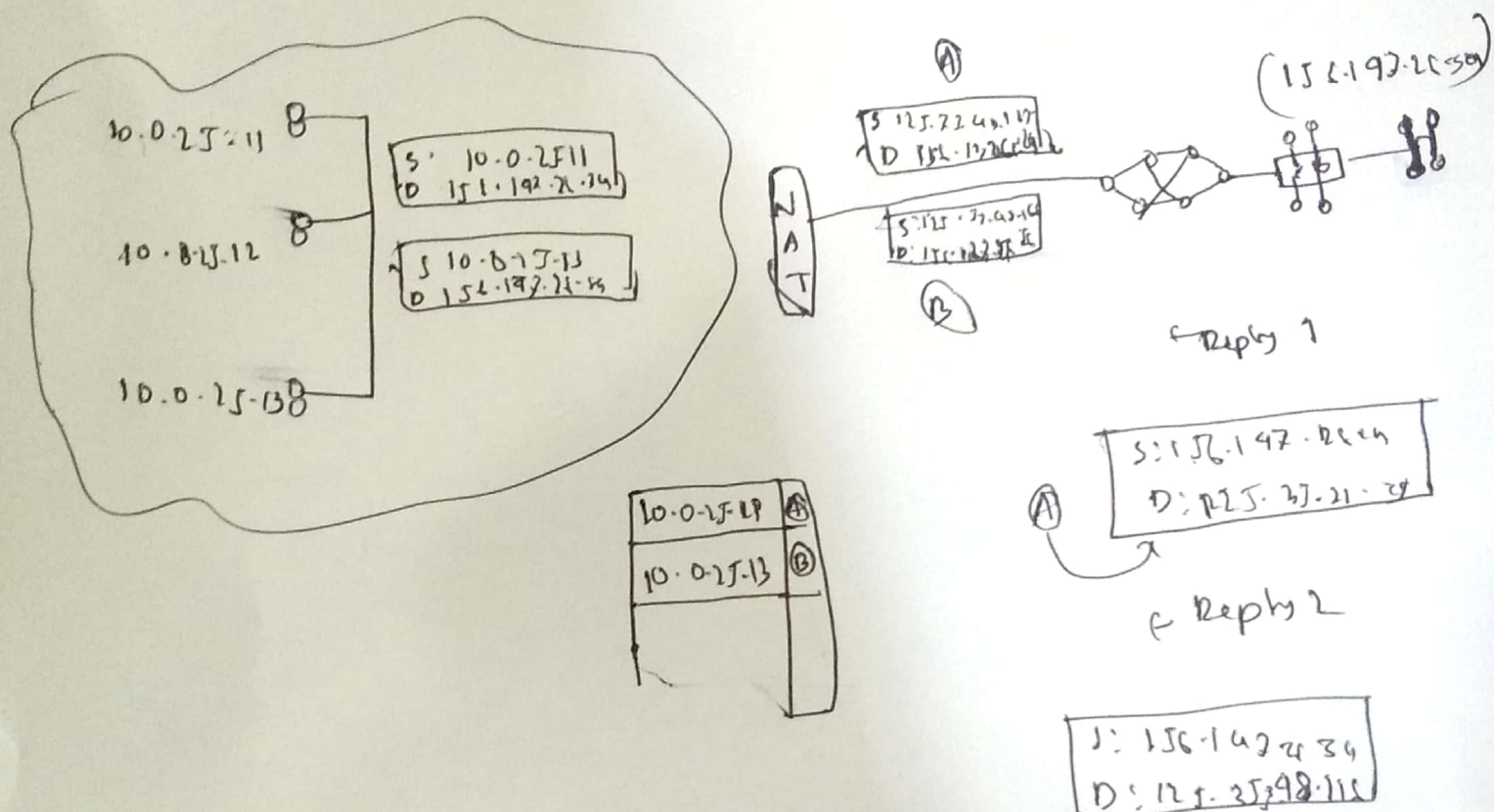(And)   1000 1110   10100011 10000100 00000000

So, subnet IP will be 191.163.132.0

∴ Possible subnet count $= 2^6 - 2$

$= 64 - 2$

$= 62$

And total number of the host $= 2^{10} - 2$

$= 1024 - 2$

$= 1022$

Here, 2 subnet will be deducted becoss 2 address can conflict on network and broadcast IP,

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Ans to the Q-03

10.0.25.11   and   10.0.25.13 is   Private JP . As These

are Private J. So, NAT will replace the JP

with IJP JP. But destination write will be

same. So, the source packet is come out from

own network with the having real JP. The

routers will trust it will word request with submit to destination and destination web server will reply. This is how NAT works. It maps Private IP onto local IP. from web 2 reply will pass to ISP router. Need to read from index because the source IP is same.