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Ans: to the Q: No: (2)

Given, 112.140.132.173/22 → Class : A

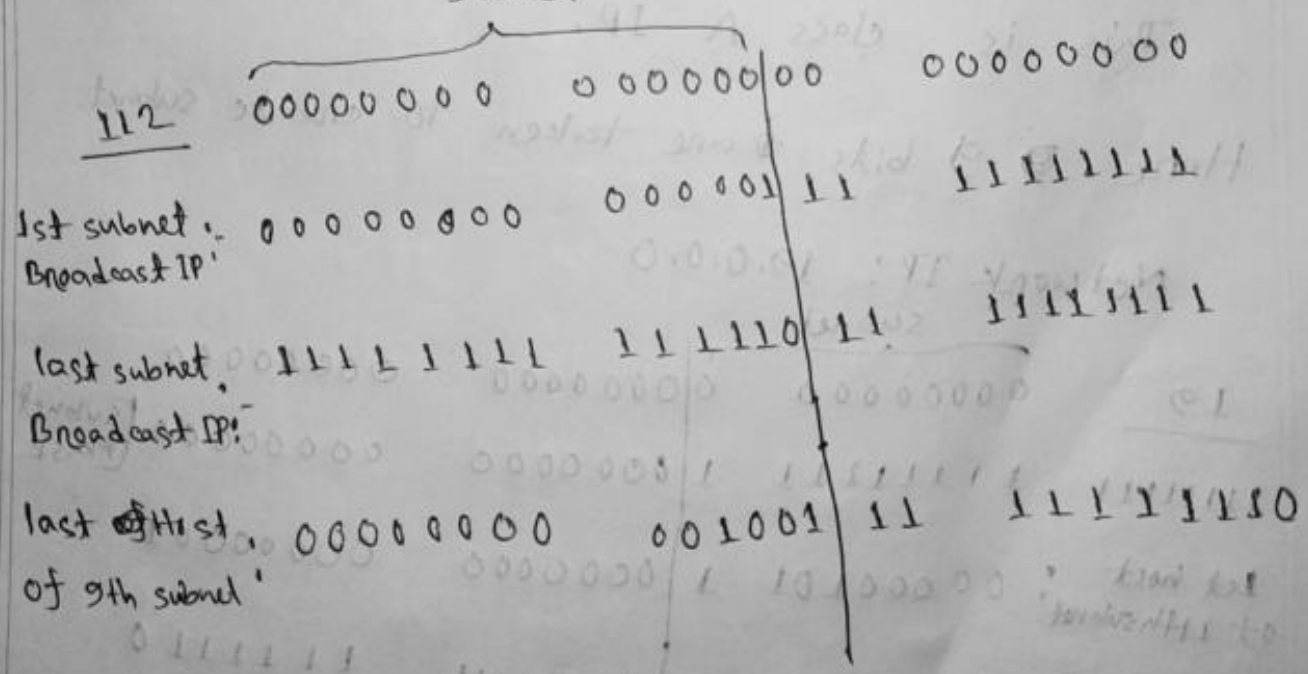
~~Network IP: 192.112.0.0~~

Network IP: 112.0.0.0

Here, Network portion consume 8 bits.

So, (22 − 8) = 14 bits are using for subnet.

(a) Number of usable subnets possible = $(2^{14} - 2)$
= 16382



(b)

1st subnets broadcast IP: 112.0.7.255

last subnets broadcast IP: 112.255.251.255

(c)

Last Host IP of 9th subnet: 112.0.39.254

Ans: to the Q.No: (1)

Given,

19.0.0.0

This is class A IP.

Here 9 bits are taken to create subnet.

Network IP: 19.0.0.0

	subnet			
19	00000000	0	0000000	00000000
11111111	11111111	1	0000000	00000000 [Subnet Mask]
1st host of 11th subnet:	00001101	1	0000000	00000001
last Host of 11th subnet:	00001101	1	1111111	11111110

(a)

Subnet mask(CIDR): 255.255.128.0/17

(c)

1st host of 11th subnet: 19.5.128.1

Last host of 11th subnet: 19.5.255.254

(b) IP = 19.0.0.0

Broadcast IP = 19.255.255.255

last subnet of this IP will be =

19.255.2

Ans to the Q: No: (4)

Here, we want to reach 'N' from T.

Source: 'T' and Destination: 'N'.

Neighbours of T: B, D, G, H.

From question we can write:

TB: 10 ms
TD: 19 ms
TG: 16 ms
TH: 18 ms

Now, Possible route of destination:-

TN: TB + BN = 10 + 8 = 18 ms
TN: TD + DN = 19 + 9 = 28 ms
TN: TG + GN = 16 + 15 = 31 ms
TN: TH + HN = 18 + 11 = 29 ms

Here we will follow the minimum from T to N. So 'T' will follow T → B then B → N path to

reach N. which is minimum.

Ans: to the Q.No: (5)

Given,

Main router's IP: 112.138.100.254/20 – class: A

Network IP: 112.0.0.0

subnet

112	01110000	0000	0000	00000000	[Subnet Mask]
11111111	11111111	1111	0000	11110000	

∴

Host IP: 112.163.135.250

11111111	11111111	11110000	00000000	[Subnet Mask]
01110000	10100011	10000111	11111010	[Host]
(And) 01110000	10100011	10000000	00000000	

∴ Subnet IP of given Host: 112.163.128.0

Number of possible subnet: $(2^{12}-2) = 4094$ (in Network)

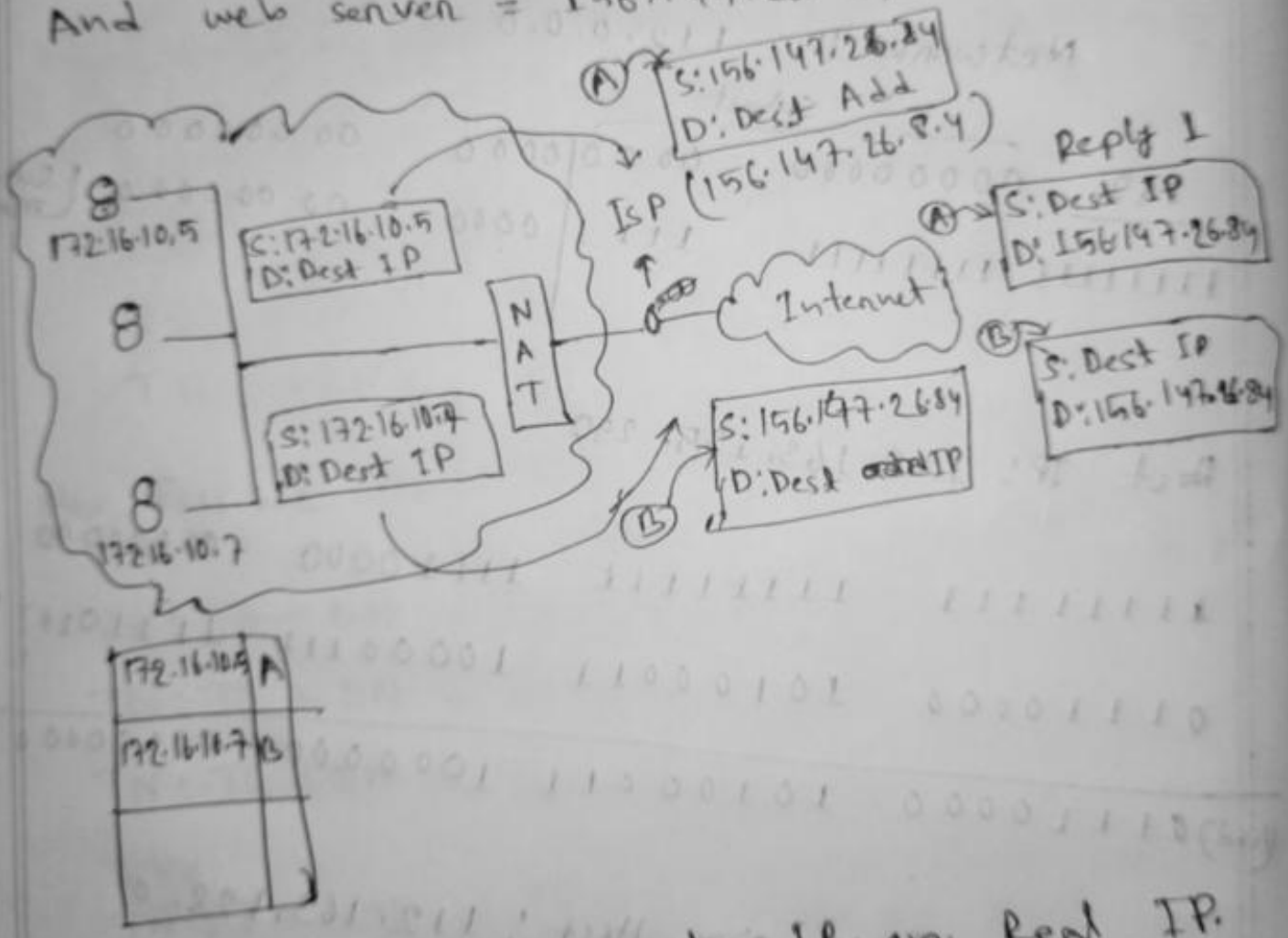
Number of possible Host: $(2^{12}-2) = 4094$ (in subnet)

Ans: to the Q: No: (3)

Here, Hosts = 172.16.10.5 and
172.16.10.7

-these are private IP address.

And web server = 156.147.26.84.



172.16.10.5	A
172.16.10.7	B

Here, NAT maping private IP on Real IP.
It give a index number to the soure IP Address to maintain the private IP address.

Then, Destination Network Reply to the ISP. At that time Source IP = Dest IP and Destination IP = ISP IP + Index.
Then ISP provide it to the NAT and NAT distributed it to the private Host IP according to its index table.