

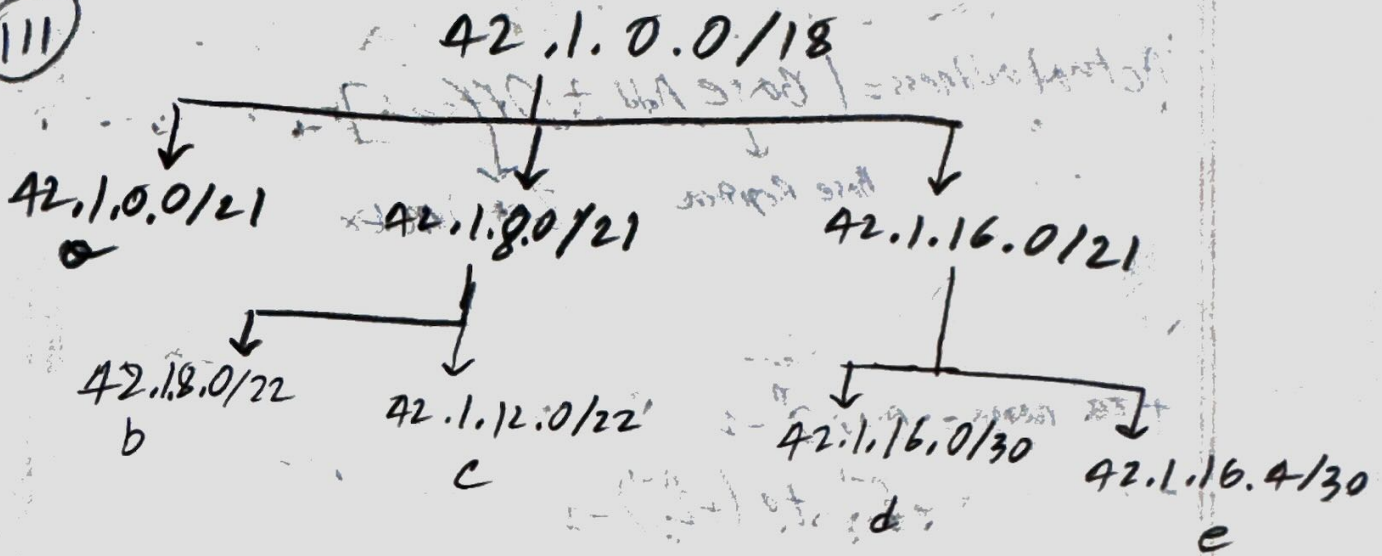
Q 1

I. Hence, Given, broadcast : 42.1.63.255

subnet mask : 255.255.192.0

II. network address : 42.1.0.0/18

(III)



2/  
i) This setup using PAT. To access the internet at the same time using a small public IP pool and simultaneously can happen by PAT.

ii) By using NAT directions can get good net speed. Because they are getting dedicated public IP. It prevent the congestion in network from other users.

3/  
i) 
$$\frac{5086-20}{1224} = 4.14$$
  
fragment = 5

ii) Remaining data =  $(5086-20) - (4 \times 1224)$   
 $= 170$

last fragment size =  $170 + 20$   
 $= 190$



iii)

$$4 \times 1224 = 4896$$

$$\text{fragment offset 5th} = \frac{4896}{8} = 612$$

iv) Identification helps host to connect & reassemble fragment. Also ensures fragments from different packets are not mixed up.

v) If DF is 1 then fragmentation is not allowed.

4) i) ip route 192.168.96.0 255.255.255.0  
192.168.10.97 2

ii) ip route 192.168.96.0 255.255.255.0  
SA 3

51

$R_1, R_2, R_3 \rightarrow$  Link state protocol

Discover neighboring routers & Detect link failures quickly

$R_1, R_2, ISP \rightarrow$  Distance Vector.

Broadcasting multicasting their entire routing table & sending update at fixed intervals,

6/ i)  $fe80:0000:0000:0000:1c35:67ab:3f9e:d81e$

ii)  $2607:0000:0000:0805:0000:0000:0000:0000$

iii)  $fd00:0abc:1234:5678:0000:0000:0000:0001$



71 ① source : PC MAC  
destination: SI FF: FF: FF: FF: FF: FF

② ARP request for MAC address of PC B

③ Not found

81 ① DHCP use broadcast messages and routers don't forward broadcast traffic by default. As a result clients in the new subnet can't communicate with the DHCP server.

② ① Configure a DHCP relay Agent,

② Deploy a Local DHCP server in the new subnet.

9) By using Tracert tool we can solve it. It helps us to find the sequence of routers between the client and the hop to hop packets responding, so will helps to find the issue.

10) The best IPv6 transition technique to ensure seamless connectivity between the university IPv4 and IPv6 networks is Dual Stack. Dual stack allows network device to run both IPv4 & IPv6 simultaneously.

11) S1 will not return.

12) PC B & PC C communicate normally and invisibly through the network. That is why switches are call transparent devices. PC don't need to be configured to work with switches.