Question gave: **87.105.0.0/16**

**Order of hosts from max to min**

**E,B,A,D,C, then serial 1 and 2**

Network E(700 hosts): 512<700 1024>700 so 1024

• How many usable IP addresses? 1024 – 2 = 1022

How many host bit? 1024= 2^10 So 10 host bits

How many network bits? 32- 10 = 22 bits

• Subnet mask in slash notation? /22

• Network address =**87.105.0.0/22**

(255.255.252.0, so gap is 4 (256-252=4) in 3rd octet. Se next subnet will be incremented by 4 in 3rd octet)

Network B ( 280 hosts): 256<280 512>280 so 512

• How many usable IP addresses? 512 – 2 = 510

How many host bit? 512 = 2^9 so 9 host bits

How many network bits? 32-9 = 23 bits

• Subnet mask in slash notation? /23

• Network address =87.105.4.0/23

(255.255.254.0, so gap is 2 (256-254=2) in 3rd octet. Se next subnet will be incremented by 2 in 3rd octet)

Network A ( 100 hosts): 64<100 128>100

• How many usable IP addresses? 128 – 2 = 126

How many host bit? 128= 2^7 = 7 host bits

How many network bits? 32-7 = 25 bits

• Subnet mask in slash notation? /25

• Network address =87.105.6.0/25

(255.255.255.128, so gap is 128 (256-128=128) in 4th octet. Se next subnet will be incremented by 128 in 4th octet)

Network D (50 hosts): 32<50 64>50

• How many usable IP addresses? 64– 2 = 62

How many host bit? 64=2^6 so 6 host bits

How many network bits? 32-6 = 26 bits

• Subnet mask in slash notation? /26

• Network address = 87.105.6.128/26

(255.255.255.192, so gap is 64 (256-192=64) in 4th octet. Se next subnet will be incremented by 64 in 4th octet)

Network C ( 10 hosts): 8<10 16>10

• How many usable IP addresses? 16– 2 = 14

How many host bit? 16=2^4 so 4 host bit

How many network bits? 32-4 = 28

• Subnet mask in slash notation? /28

• Network address =87.105.6.192/28

(255.255.255.240, so gap is 16 (256-240=16) in 4th octet. Se next subnet will be incremented by 16 in 4th octet)

Serail1

• How many usable IP addresses? 4– 2 = 2

How many host bit? 4 = 2^2 so 2 host bit

How many network bits? 32 -2 =30 so 30 bit

• Subnet mask in slash notation? /30

• Network address =87.105.6.208/30

(255.255.255.252, so gap is 4 (256-252=4) in 4th octet. Se next subnet will be incremented by 4 in 4th octet)

Serail2

• How many usable IP addresses? 4– 2 = 2

How many host bit? 4 = 2^2 so 2 host bit

How many network bits? 32 -2 =30 so 30 bit

• Subnet mask in slash notation? /30

• Network address =87.105.6.212/30