1. VLSM

Lan B

2^x >= (3000+2) => x = 12

32-12 = 20

ip 172.10.0.0/20

+ 4096 address for next

Lan C

2^x >= 2002 => x = 11

32-11 = 211

ip 172.10.16.0/21

+ 2048 address for next

Lan A

2^x >= 902 => x = 10

32-10 = 22

ip 172.10.24.0/22

+ 1024 address for next

Lan E

2^x >= 502 => x = 9

32-9 = 23

ip 172.10.28.0/23

+ 512

Lan D

2^x >= 202 => x=8

32-8= 24

ip 172.10.30.0/24

+ 256

Link A

ip 172.10.31.0/30

Link B

ip 172.10.31.4/30

1. STP

S2 is the root

S2 ports : All D ports

S1 ports : G1/0/5 is the root, G1/0/1 and G1/0/2 are the designated ports and G1/0/6 is the non designated port

S3 ports: F0/3 is the root and other ports are non designated.