Question 11

number of needed usable Hosts => 8000

network address => 135.70.0.0

ADDress class => B

Default subnet Mask => 255.255.0.0

custome Subnet mask => 255.255.31.255

Total number of subnets => 8̶ 8

Total number of Host addresses => 8̶1̶9̶2̶ 8192

number of usable addresses => 8̶1̶9̶0̶ 8190

number of Bits borrowed => 1̶3̶ 3

6th Subnet Range => 135.70.160.0 to
135.70.141.0

7th subnet number => 6

3rd subnet Broadcast address => 135.70.95.0

5th Subnet Assignable address => 135.70.129.0 to
135.70.158.0

Q 6

IP address 10.0.0.0

ADDress class => A

custom subnet mask => 255.240.0.0

Minimum number of subnets needed => 7

Extra subnets for 20% growth => 2

Total number of subnets => 9

IP address Range for technology => 10.0.0:0 ->
                                   10.15.0.0

IP address Range for Science => 10.16.0.0 ->
                                 10.31.0.0

IP address for Arts and drama => 10.32.0.0 ->
                                  10.47.0.0

IP address for administration => 10.48.0.0 ->
                                  10.63.0.0

IP address for Router A to Router B => 10.64.0.0 -
                                        10.79.0.0

IP Address for Router A to Router C => 10.80.0.0 -
                                        10.95.0.0

IP ADDress for Router B to router C => 10.96.0.0 -
                                        10.111.0.0

Q 4

ADD ress => 135 . 126 . 0 . 0

ADDress   class   =>   B

Cus tome   subnet   mask => 255 . 255 . 240 . 0

Minimum   number   of   subnets   required => 5

extra   subnets   for 70% growth => 4

Total   number   of   subnets   needed => 9

number   of   Host   addresses   in   largest   subnet   group
=>   325

number   of   addresses   needed   for   70 %   growth
in   largest   subnet   =>   228
Total   number   of   subnets   needed => 553
IP   address   range   New   York => 135 . 126 . 0 . 0   to
                                        135 . 126 . 15 . 0

IP address range   Washington   D.C => 135 . 126 . 16 . 0   to
                                        135 . 126 . 31 . 0

IP   address   range   for   Dallas => 135 . 126 . 32 . 0   to
                                        135 . 126 . 47 . 0

IP ADDress   range for   Router A   to   Router   B
Serial   connection   =>   135 . 126 . 48 . 0   to
                                135 . 126 . 63 . 0

Question 15

number   of   needed   usable   Hosts   =>   50

network   address   172 . 59 . 0 . 0

ADDress   class   => B

Default   subnet   mask   => 255 . 255 . 0 . 0

Custom   Subnet   mask   => 255 . 255 . 255 . 192

Total   number   of   subnets   =>   1024

Total   number   of   Host   addresses   =>   64

number   of   usable   addresses   =>   62

number   of   bits   borrowed   =>   ~~8~~ 10

		128	64	32	16	8	4	2	1	
172 . 59 .	0	0	0	0	0	0	0 0	. 0 0	0 0

128
+ 64
——
192

Question 7

number of needed Subnets 2000

number of usable Host 15

network ADDress 178.100.0.0

ADDress class => B

default subnet mask => 255.255.0.0

custom subnet Mask => 255.255.255.224

Total number of subnets => ~~2048~~ 2048

Total number of Host address => 32

number of usable addresses => 30

number of bits borrowed => 11

$$
\begin{array}{r}
32 \\
64 \\
+\ 128 \\
\hline
224
\end{array}
$$

$$
\begin{array}{r}
\text{total no} \\
32 \quad \text{Hosts} \\
-\ 2 \quad \text{Sub 2} \\
\hline
30 \quad \text{no of} \\
\text{usable H}
\end{array}
$$

Question   12

number   of   needed   usable   Hosts   => 45

Network   address   => 198 . 125 . 50 . 0

ADDress   class   =>   C

Default   Subnet   Mask   => 255 . 255 . 255 . 0

custom   subnet   Mask   => 255 . 255 . 255 . 192

Total   number   of   Subnets   =>   4 4

Total   number   of   Host   addresses =>   64 64

number   of   usable   addresses =>   62 62

number   of   Bits   borrowed   =>   2 2

2nd   subnet   Range   => 198. 125. 50 . 64   to
                                  198 . 125 . 50 . 127

2nd   Subnet   number => 1

Broad   cast   address   for   4th   subnet => 198. 125. 50. 255

Assignabl   addresses   for   3rd   subnet => 198. 125. 50. 129
                                       to 198. 125. 50. 190