**IP Address Classes**

Class A 1 – 127 (Network 127 is reserved for loopback and internal testing)

Leading bit pattern 0 00000000.00000000.00000000.00000000

Class B 128 – 191 Leading bit pattern 10 10000000.00000000.00000000.00000000

Class C 192 – 223 Leading bit pattern 110 11000000.00000000.00000000.00000000

Class D 224 – 239 (Reserved for multicast)

Class E 240 – 255 (Reserved for experimental, used for research)

**Private Address Space**

Class A 10.0.0.0 to 10.255.255.255

Class B 172.16.0.0 to 172.31.255.255

Class C 192.168.0.0 to 192.168.255.255

**Default Subnet Masks**

Class A 255.0.0.0

Class B 255.255.0.0

Class C 255.255.255.0

**Address Class Identification**

10.250.1.1 \_\_\_\_\_

150.10.15.0 \_\_\_\_\_

192.14.2.0 \_\_\_\_\_

148.17.9.1 \_\_\_\_\_

193.42.1.1 \_\_\_\_\_

126.8.156.0 \_\_\_\_\_

220.200.23.1 \_\_\_\_\_

230.230.45.58 \_\_\_\_\_

177.100.18.4 \_\_\_\_\_

119.18.45.0 \_\_\_\_\_

249.240.80.78 \_\_\_\_\_\_

**Write Net id , Host id , Network address and Default mask for below IP addresses**

177.100.18.4

119.18.45.0

209.240.80.78

199.155.77.56

95.0.21.90

33.0.0.0

215.45.45.0

117.89.56.45

10.250.1.1

193.42.1.1

123.102. 45.254

223.250.200.222

10.15.123.50

1.1.10.50 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

220.90.130.45 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

134.125.34.9 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

95.250.91.99

**Custom Subnet Masks**

**Problem 1**

Number of needed subnets = 14

Number of needed usable hosts = 14

Network Address = 192.10.10.0

Address class

Default subnet mask

Custom subnet mask

Total number of subnets

Total number of host addresses

Number of usable addresses

Number of bits borrowed

**Problem 2**

Number of needed subnets = 1000

Number of needed usable hosts = 60

Network Address = 165.100.0.0

Address class

Default subnet mask

Custom subnet mask

Total number of subnets

Total number of host addresses

Number of usable addresses

Number of bits borrowed

**Problem 3**

Network Address : 148.75.0.0 /26

Address class \_\_\_\_\_\_\_\_\_\_

Default subnet mask \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Custom subnet mask \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of subnets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of host addresses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_

Number of usable addresses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of bits borrowed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Problem 4**

Number of needed subnets : 6

Number of needed usable hosts : 30

Network Address: 210.100.56.0

Address class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Default subnet mask \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Custom subnet mask \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of subnets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of host addresses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of usable addresses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of bits borrowed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Problem 5**

Number of needed subnets : 126

Number of needed usable hosts : 131,070

Network Address: 118.0.0.0

Address class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Default subnet mask \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Custom subnet mask \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of subnets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total number of host addresses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of usable addresses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Number of bits borrowed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_