COMPUTER NETWORK ASSIGNMENT

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Q2. Class B network having IP Address 173.20.0.0 is divided into 18 subnets, Answer the followings

(a) Find the Subnet mask of Network after subnetting .

(b) How many maximum number of of hosts are possible in a subnet

(c) Find the Network ID and Broadcast address of third, Fourth , Seventh Subnetwork .

(d) Find the First IP Address of third Subnetwork

(e) Find the 350^{th}, Last and First IP Address of tenth Subnetwork

(f) Find the 760^{th}, Last and First IP Address of ninth Subnetwork

(g) A subnetwork have IP address 173.20.185.189 , Find the First and last IP address of this network

(h) A subnetwork have IP address 173.20.75.23 , Find the First and last IP address of this network

A-2
(a.)173.20.0.0
network=255.255.0.0
$2^5 = 32$
173.20.00000000.0
173.20.0.0
255.255.248.0

(b.)$2^{11} = 2048 - 2 = 2046$
subnet=2046

(c.)third network=173.20.00010000.00000000
network ID=173.20.16.0
address ID=173.20.23.255
forth network=173.20.00011000.00000000
network ID=173.20.24.0
address ID=173.20.31.255
seventh network=173.20.00110000.00000000
network ID=173.20.48.0
address ID=173.20.63.255

(d.)173.20.00010000.00000000
(i.)173.20.00010000.00000001
173.20.16.1
173.20.00010111.11111111

(e.)173.20.01010000.00000000
first ip=173.120.01010000.00000001
173.20.80.1
173.20.01010001.01011110
350th ip=173.20.81.94
last ip=173.20.01010111.11111110
173.20.01010111.11111111
173.20.87.254

(f.)173.20.01001.00000000
first ip=73.20.01001000.00000000
173.20.72.1
760th ip=173.20.74.248
173.20.74.248
last ip=173.20.01001111.11111110
173.20.01001111.11111111

(g.)173.20.185.189
255.255..248.0
173.20.184.0
first ip=173.20.184.1
last ip=173.20.10111111.11111111
173.20.191.254

(h.)173.20.75.23
255.255.248.0
173.20.72.0
first ip=173.20.01001000.00000000
173.20.72.1

last ip=173.20.79.254

Q4. Subnet ID of last subnet of a class C network is 192.13.224.192 , Answer the followings

(a) Find the Subnet mask of Network after subnetting .

(b) How many maximum number of of hosts are possible in this subnet

(c) Find the Network ID and Broadcast address of first, second , third Subnetwork .

(d) Find the First IP Address of third Subnetwork

(e) Find the 12^{th}, Last and First IP Address of second Subnetwork

(f) Find the 45^{th}, Last and First IP Address of third Subnetwork

(g) A subnetwork have IP address 192.13.224.75 , Find the First and last IP address of this Subnetwork.

(h) A subnetwork have IP address 192.13.224.198 , Find the First and last IP address of this Subnetwork

A-4

subnet ID of last subnet=192.13.224.192
(a.)192.13.224.11000000
no. of bits used for subnetting
therefor subnet mask is=255.255.255.192

(b.)

no. of bits used for host=6
no. of host per subnet=$2^6 - 2 = 62$

(c.)first ip=192.13.224.00000000-net id
192.13.224.63-broadcast address
second ip=192.13.224.01000000-net id
192.13.224.01111111
192.13.224.127-broadcast address
third ip=192.13.224.10000000-net id

192.13.224.191-broadcast address

(d.)192.13.224.10000000
192.13.224.10000001
192.13.224.128

192.13.224.10111111

(e.)192.13.224.01000000
first ip=192.13.224.01000001
192.13.224.65

twelth ip=192.13.224.01001100
192.13.224.76

last ip=192.13.224.01111111
192.13.224.01111110
192.13.224.126

(f.)192.13.224.10000000
first ip=192.13.224.10000001
192.13.224.129

forthy fifth ip=192.13.224.10101101
192.13.224.173

192.13.224.190
192.13.224.10111110
192.13.224.10111111

(g.)
192.13.224.75
255.255.255.192

192.13.224.64-net id
192.13.224.01000000
first ip=192.13.224.65

last ip=192.13.224.126
192.13.224.01111111

(h.)
192.13.224.198
255.255.255.192

192.13.224.192-net id
first id=192.13.224.11000000
192.13.224.193

last ip=192.13.224.11111111
192.13.224.11111110
192.13.224.254

Q6. Find the possible Subnet mask (at least 3) of subnets which have following pairs of IP address. Every Pair belongs to same network

(a) 175.120.95.245 & 175.120.112.232

(b) 177.156.125.234 & 177.156.56.123

(c) 198.13.40.123 & 189.13.50.110

(d) 900.15.156.234 & 90.15.129.234

A-6

(a) 175.120.95.245 and 175.120.112.232

when subnet mask is=255.255.0.0
so,after anding with a.the IP address match.

therefor first subnet mask is=255.255.0.0

when subnet mask is=255.255.128.0
after anding with a.the IP address match.

therefor second subnet mask is=255.255.128.0

when subnet mask is=255.255.192.0
after anding with a.the IP address match.

therefor third subnet mask is=255.255.192.0

(b) 177.156.125.234 and 177.156.56.123

let subnet mask is=255.255.0.0
after anding the IP address match.

so first subnet mask is=255.255.0.0

let subnet mask is=255.255.128.0
after anding the IP address match.

so first subnet mask is=255.255.128.0

let subnet mask is=255.255.224.0

therefor third subnet mask is=255.255.224.0

(c) 198.13.40.123 and 189.13.50.110

let subnet mask is=255.255.0.0
after anding there is no match.

therefor so,there is no third subnet mask.

(d) 90.15.156.234 and 90.15.129.234

let subnet mask is=255.255.0.0
after anding the IP address match.

so first subnet mask is=255.255.0.0

let subnet mask is=255.255.128.0
after anding the IP address match.

so second subnet mask is=255.255.128.0

let subnet mask is=255.255.192.0
after anding the IP address match.

so third subnet mask is=255.255.192.0

Q8. An IP router implementing Classless Inter-domain Routing (CIDR) . The routers routing table has the following entries:

Prefix	Output Interface Identifier
129.16.64.0/14	3
129.28.14.0/ 13	5
129.19.13.0/ 17	2
129.22.45.0/ 18	1
default	4

Suppose router receive 10 packet with destination IP address as given below , find the destination Interface for each data packet .

(a) 129.53.112.126

(b) 129.175.125.234

(c) 129.125.190.24

(d) 129.245.178.173

(e) 129.85.241.153

(f) 129.35.135.124

(g) 129.195.169.217

(h) 129.215.190.24

(i) 129.45.178.173

(j) 129.23.241.153

(k) 129.135.135.124

A-8

(a.)

129.53.112.126
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(b.)

129.175.125.234
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(c.)

129.125.190.24
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(d.)

129.245.178.173
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(e.)

129.85.241.153
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(f.)

129.35.135.124
after ending with subnet mask.

it will go in default.
so destination interface is 4.

(g.)

129.195.169.217
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(h.)

129.215.190.24
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(i.)

129.45.178.173
after ending with subnet mask.
it will go in default.
so destination interface is 4.

(j.)

129.23.241.153
after ending with subnet mask.
so destination interface is 3.

(k.)

129.135.135.124
after ending with subnet mask.
it will go in default.
so destination interface is 4.