**Name – Jain Samkitkumar Hasmukhlal Roll. No. - 20**

**Assignment 1 – Subnetting**

**Configuration:**

**Router 0:-**

Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface serial 2/0

Router(config-if)#ip address 210.86.60.1

% Incomplete command.

Router(config-if)#ip address 210.86.60.1 255.0.0.0

Router(config-if)#ip address 210.86.60.1 255.255.255.224

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to down

Router(config-if)#exit

Router(config)#

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config)#interface serial 2/0

Router(config-if)#ip address 210.86.60.1 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface serial 3/0

Router(config-if)#ip address 210.86.60.97 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to down

Router(config-if)#exit

Router con0 is now available

Press RETURN to get started.

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet0/0

Router(config-if)#ip address 210.86.60.129 255.255.255.224

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#router eigrp 1

Router(config-router)#network 210.86.60.0

Router(config-router)#network 210.86.60.96

Router(config-router)#network 210.86.60.128

Router(config-router)#exit

**Router 1:-**

Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface serial 2/0

Router(config-if)#ip address 210.86.60.66 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to u

Router(config)#interface serial 3/0

Router(config-if)#ip address 210.86.60.98 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

Router(config-if)#exit

Router(config)#interface fastethernet 0/0

Router(config-if)#ip address 210.86.60.225 255.255.255.224

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#router eigrp 1

Router(config-router)#network 210.86.60.64

Router(config-router)#network 210.86.60.64

%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 210.86.60.97 (Serial3/0) is up: new adjacency

Router(config-router)#network 210.86.60.96

Router(config-router)#network 210.86.60.224

Router(config-router)#exit

**Router 2:**

Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface serial 2/0

Router(config-if)#ip address 210.86.60.2 255.255.255.224

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial 2/0

Router(config-if)#ip address 210.86.60.2 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdo

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface serial 3/0

Router(config-if)#ip address 210.86.60.33 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to down

Router(config-if)#exit

Router con0 is now available

Press RETURN to get started.

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet 0/0

Router(config-if)#ip address 210.86.60.161 255.255.255.224

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#router eigrp 1

Router(config-router)#network 210.86.60.32

Router(config-router)#network 210.86.60.32

Router(config-router)#network 210.86.60.160

Router(config-router)#no network 210.86.60.160

Router(config-router)#network 210.86.60.0

Router(config-router)#network 210.86.60.160

Router(config-router)#

%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 210.86.60.1 (Serial2/0) is up: new adjacencyexit

**Router 3:**

Continue with configuration dialog? [yes/no]: n

Press RETURN to get started!

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface serial 3/0

Router(config-if)#ip address 210.86.60.34 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up

Router(config-if)#exit

Router(config)#interface serial 2/0

Router(config-if)#ip address 210.86.60.65 255.255.255.224

Router(config-if)#clock rate 64000

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to down

Router(config-if)#exit

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router con0 is now available

Press RETURN to get started.

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fastethernet 0/0

Router(config-if)#ip address 210.86.60.193 255.255.255.224

Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#router eigrp 1

Router(config-router)#network 210.86.60.32

Router(config-router)#network 210.86.60.32

Router(config-router)#network 210.86.60.192

Router(config-router)#network 210.86.60.64

Router(config-router)#exit

%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 210.86.60.66 (Serial2/0) is up: new adjacency

**Results of above configuration are:**

Packet Tracer PC Command Line 1.0

PC>ipconfig

IP Address......................: 210.86.60.163

Subnet Mask.....................: 255.255.255.224

Default Gateway.................: 210.86.60.161

**PING**

PC>ping 210.86.60.226

Pinging 210.86.60.226 with 32 bytes of data:

Reply from 210.86.60.226: bytes=32 time=218ms TTL=125

Reply from 210.86.60.226: bytes=32 time=156ms TTL=125

Reply from 210.86.60.226: bytes=32 time=171ms TTL=125

Reply from 210.86.60.226: bytes=32 time=188ms TTL=125

Ping statistics for 210.86.60.226:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 156ms, Maximum = 218ms, Average = 183ms

**Show ip route:**

**Router 0:**

Router>show ip route

Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP

D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP

i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area

\* - candidate default, U - per-user static route, o - ODR

P - periodic downloaded static route

Gateway of last resort is not set

210.86.60.0/27 is subnetted, 8 subnets

C 210.86.60.0 is directly connected, Serial2/0

D 210.86.60.32 [90/21024000] via 210.86.60.2, 00:09:17, Serial2/0

D 210.86.60.64 [90/21024000] via 210.86.60.98, 00:07:46, Serial3/0

C 210.86.60.96 is directly connected, Serial3/0

C 210.86.60.128 is directly connected, FastEthernet0/0

D 210.86.60.160 [90/20514560] via 210.86.60.2, 00:09:17, Serial2/0

D 210.86.60.192 [90/21026560] via 210.86.60.2, 00:08:41, Serial2/0

[90/21026560] via 210.86.60.98, 00:07:45, Serial3/0

D 210.86.60.224 [90/20514560] via 210.86.60.98, 00:07:46, Serial3/0

**Show ip protocol:**

Router>show ip protocol

Routing Protocol is "eigrp 1 "

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Default networks flagged in outgoing updates

Default networks accepted from incoming updates

EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0

EIGRP maximum hopcount 100

EIGRP maximum metric variance 1

Redistributing: eigrp 1

Automatic network summarization is in effect

Automatic address summarization:

Maximum path: 4

Routing for Networks:

210.86.60.0

Routing Information Sources:

Gateway Distance Last Update

210.86.60.2 90 3427548

210.86.60.98 90 3522201

Distance: internal 90 external 170