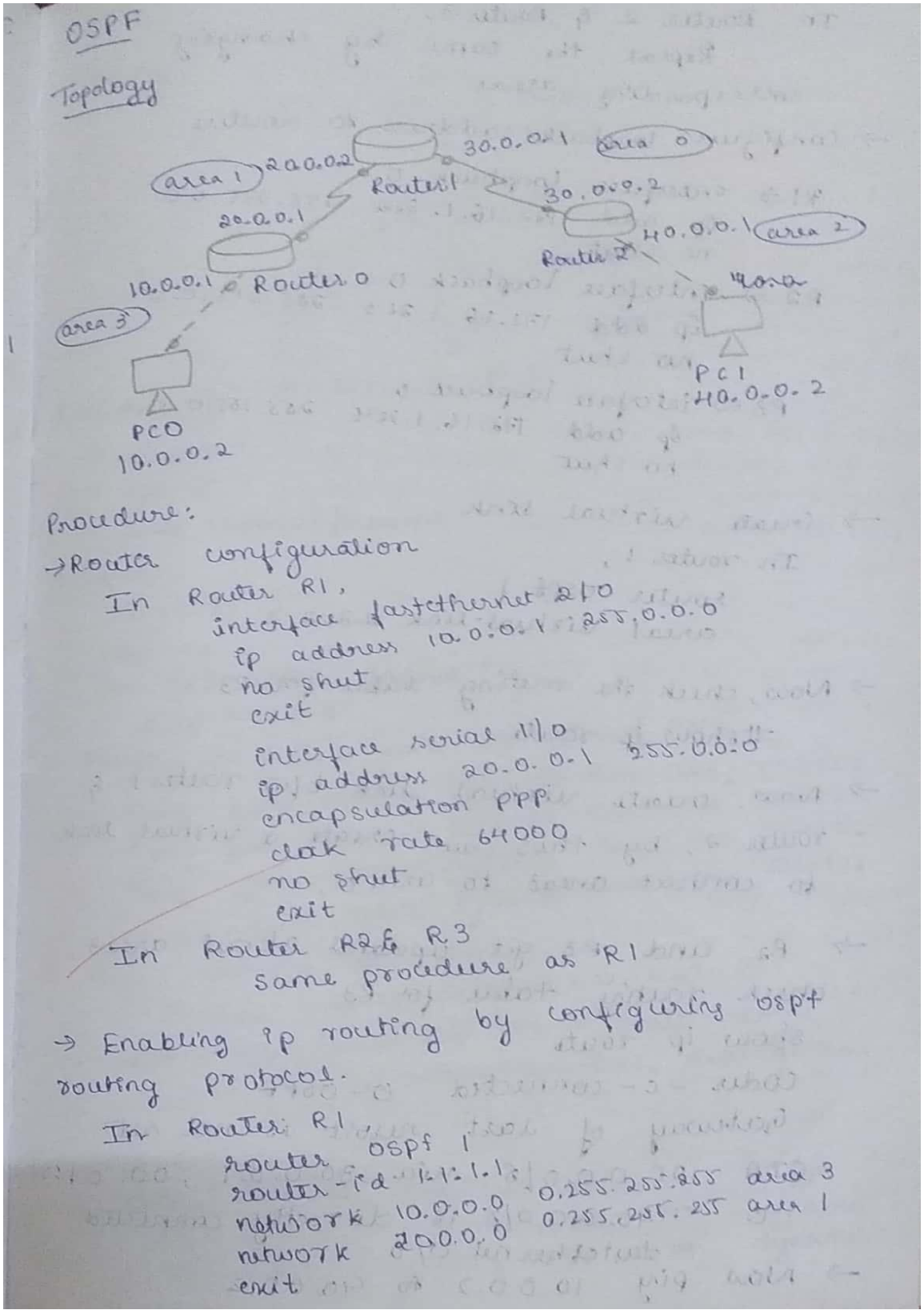
Configure OSPF routing protocol



Procedure:

→ Router configuration

In Router R1,

```
interface fastethernet 2/0
ip address 10.0.0.1 255.0.0.0
no shut
exit
interface serial 1/0
ip address 20.0.0.1 255.0.0.0
encapsulation PPP
clock rate 64000
no shut
exit
```

In Router R2 & R3

same procedure as 'R1'

→ Enabling ip routing by configuring ospf routing protocol.

In Router R1,

```
router ospf 1
router-id 1.1.1.1
network 10.0.0.0 0.255.255.255 area 3
network 20.0.0.0 0.255.255.255 area 1
exit
```

In Router 2 & Router 3,
Repeat the same by changing corresponding areas.

→ Configure loopback address to routers

R1 ⇒ interface loopback 0
ip add 192.16.1.252 255.255.0.0
no shut

R2 ⇒ interface loopback 0
ip add 172.16.1.253 255.255.0.0
no shut

R3 ⇒ interface loopback 0
ip add 172.16.1.254 255.255.0.0
no shut

→ Create virtual link
In router 1,
router ospf 1
area1 virtual-link 2.2.2.2

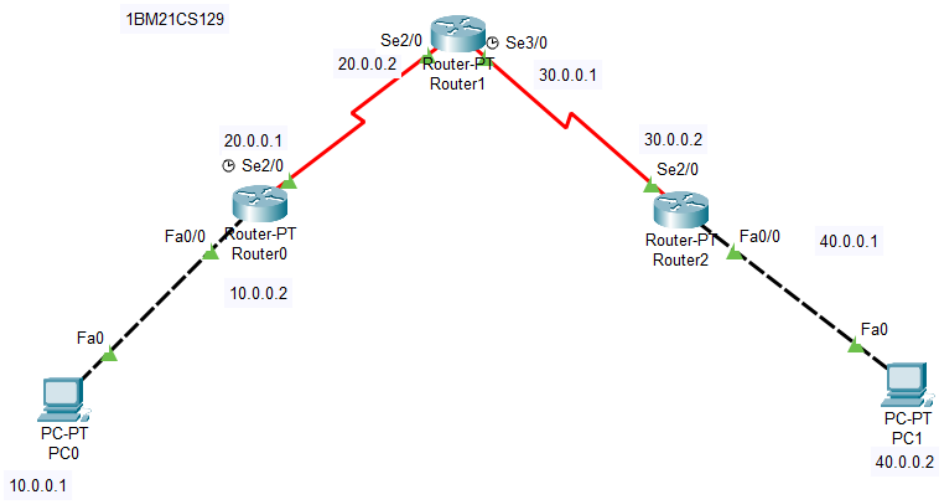
→ Now, check the routing table for R3.
#show ip route

→ Now, create virtual link b/w router 1 & router 2, by this we create a virtual link to connect area3 to area 0.

→ R2 and R3 get updated about area3, check routing table for R3
show ip route
Code - C - connected O - OSPF
Gateway of last resort is not set
O IA 20.0.0.0/8 via 30.0.0.1, 00:01:56,
C 40.0.0.0/8 is directly connected
fastethernet 0/0

→ Now ping 10.0.0.2 to 40.0.0.2

Topology:



Output: