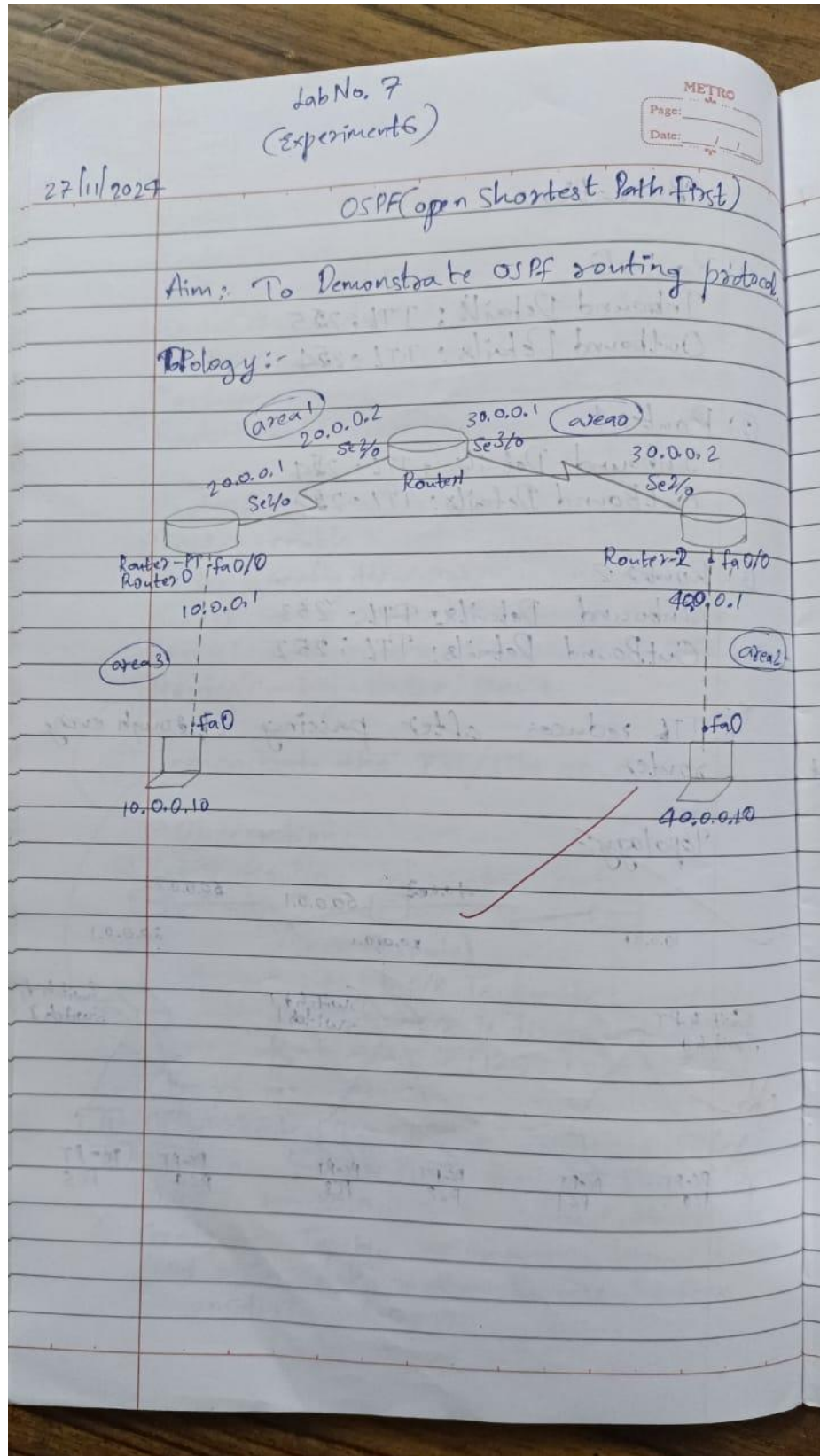


## LABORATORY PROGRAM – 6

### Configure OSPF routing protocol



### Procedures:-

- ① Place three routers & 2 end devices, connect them as per topology & assign ip address.
- ② Set IP address to routers.

#### Routers 1:-

```
Router(config)# interface Serial 2/0
Router(config-if) # ip address 20.0.0.1 255.0.0
Router(config-if) # encapsulation ppp
Router(config-if) # clock rate 64000
```

Similarly Set for other 2 routers

- ③ OSPF routing:-

#### Routers 1:-

```
Router(config) # router ospf 1
Router(config-router) # router-id 1.1.1.1
Router(config-router) # network 10.0.0.0
                                0.255.255.255 area 3
Router(config-router) # network 20.0.0.0
                                0.255.255.255 area 1
```

Similarly Set for other 2 routers i.e 2.2.2.2 & 3.3.3.3

- ④ Loopback

#### Routers 1:-

```
Router(config) # interface loopback 0
Router(config-if) # ip address 172.16.1.252
                                255.255.0.0
Router(config-if) # no shutdown
```

Similarly do for other 2 routers

172.16.1.253  
172.16.1.254

⑤ Ping device 40.0.0.10 from 10.0.0.10

### OBSERVATION:-

#### ① Routing Table:-

for Router 8:

Router # Show ip route

O IA 10.0.0.0/8 via 30.0.0.1

O IA 20.0.0.0/8 via 30.0.0.1

30.0.0.0/8 is variably Subnetted,  
2 Subnets, 2 masks

C 30.0.0.0/8 is directly connected Serial 2/0

C 30.0.0.1/32 is directly connected, Serial 2/0

C 40.0.0.0/8 is directly connected, Fa0/0

C 172.16.0.0/16 is directly connected, Loopback

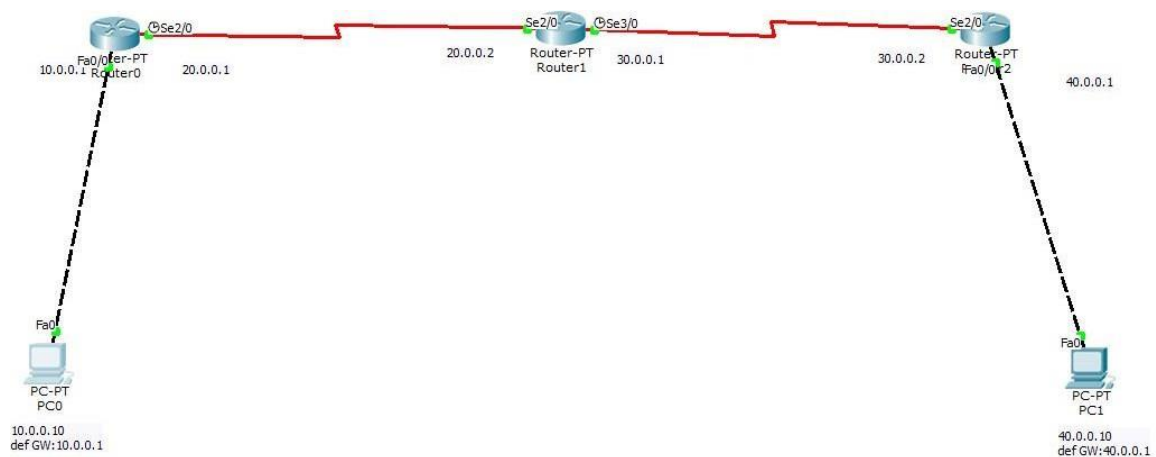
- All the routers know about each other

- Thus Connection Successfully established  
through OSPF protocol.

#### ② Pinging:-

→ Pinging was Successful: The data packets  
were Successfully Sent from device 10.0.0.10  
to 40.0.0.10 as connection was established  
through OSPF protocol.





PC0

Physical Config Desktop Custom Interface

### Command Prompt

```
Pinging 40.0.0.10 with 32 bytes of data:

Request timed out.
Reply from 40.0.0.10: bytes=32 time=7ms TTL=125
Reply from 40.0.0.10: bytes=32 time=7ms TTL=125
Reply from 40.0.0.10: bytes=32 time=8ms TTL=125

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 8ms, Average = 7ms

PC>ping 40.0.0.10

Pinging 40.0.0.10 with 32 bytes of data:

Reply from 40.0.0.10: bytes=32 time=9ms TTL=125
Reply from 40.0.0.10: bytes=32 time=7ms TTL=125
Reply from 40.0.0.10: bytes=32 time=6ms TTL=125
Reply from 40.0.0.10: bytes=32 time=6ms TTL=125

Ping statistics for 40.0.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 9ms, Average = 7ms

PC>
```