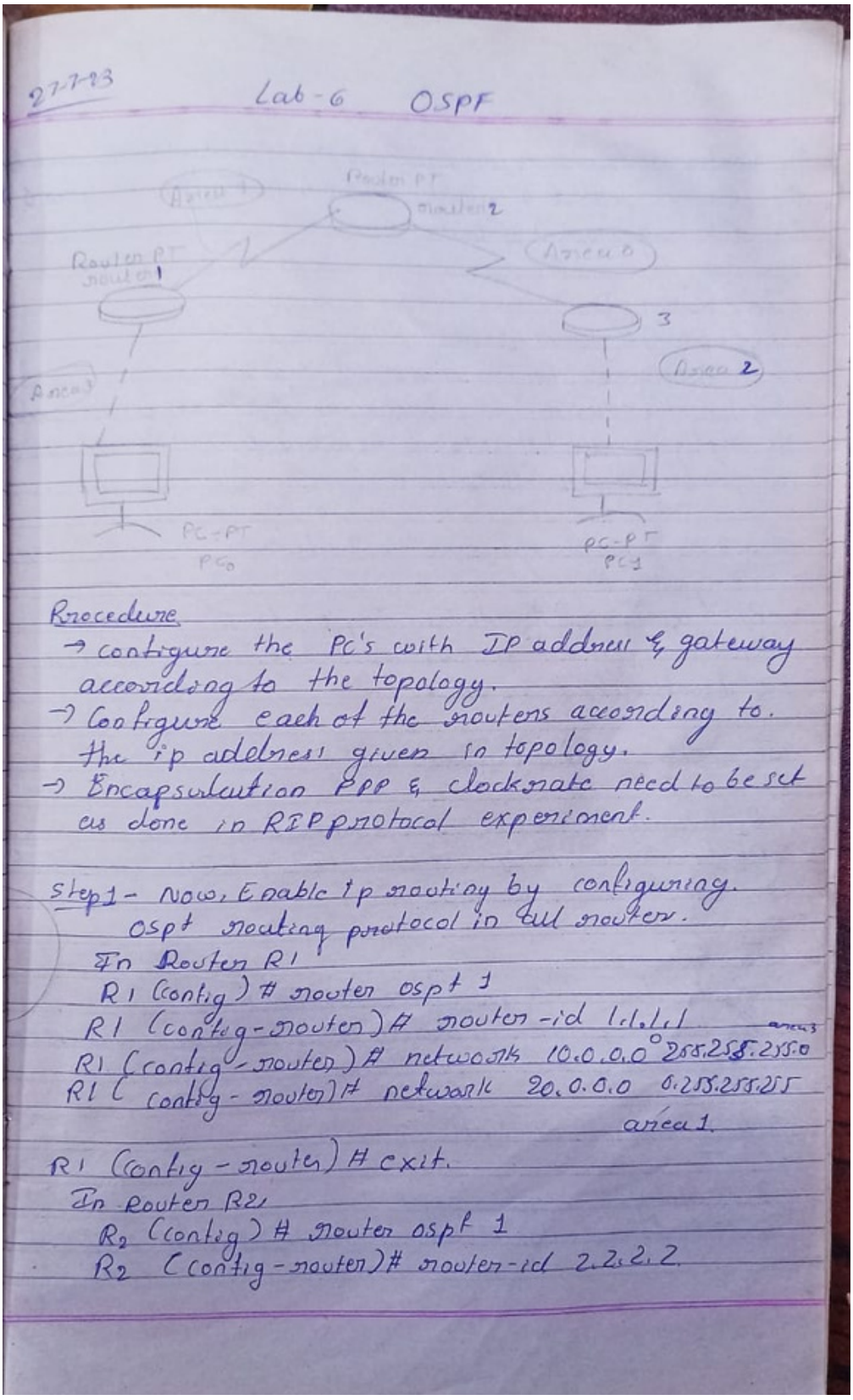
WEEK 7

Configure OSPF routing protocol. OBSERVATION:



27-7-23 Lab-6 OSPF

Procedure

→ configure the PC's with IP address & gateway according to the topology.
→ Configure each of the routers according to the ip address given in topology.
→ Encapsulation PPP & clockrate need to be set as done in RIP protocol experiment.

Step 1 - Now, Enable ip routing by configuring ospf routing protocol in all router.

In Router R1

R1 (config) # router ospf 1
R1 (config-router) # router-id 1.1.1.1
R1 (config-router) # network 10.0.0.0 255.255.255.0 area 1
R1 (config-router) # network 20.0.0.0 0.255.255.255 area 1.
R1 (config-router) # exit.

In Router R2

R2 (config) # router ospf 1
R2 (config-router) # router-id 2.2.2.2

R2 (config-router)# network 20.0.0.0 0.255.255.255 area
R2 (config-router)# network 30.0.0.0 0.255.255.255 area
R2 (config-router)# exit.

In Router R3,
R3 (config)# router ospf 1
R3 (config-router)# router-id 3.3.3.3
R3 (config-router)# network 30.0.0.0 0.255.255.255 area
R3 (config-router)# networks 40.0.0.0 0.255.255.255 area
R3 (config-router)# exit.

Step 4:- Loopback on Serial interface
In router R1
R1 (config-if)# interface loopback 0.
R1 (config-if)# ip address 172.16.1.252 255.255.0.0
R1 (config-if)# no shut

In router 2 in serial interface

R2 (config-if)# interface loopback 0
R2 (config-if)# ip address 172.16.1.253 255.255.0.0
R2 (config-if)# no shut

In router 3.
R3 (config-if)# interface loopback 0
R3 (config-if)# ip address 172.16.1.254 255.255.0.0
R3 (config-if)# no shut

Step 5:- Virtual link
In router R1
R1 (config)# router ospf 1
R1 (config-router)# area 1 virtual-link 2.2.2.2

In router R_2

R_2 (config) # router ospf 1

R_2 (config-router) # area 1 virtual-link 1.1.2.1

R_2 (config router) # exit

→ show ip route

O IA 10.0.0.0 /8 [110/129] via 30.0.0.1 serial 3/0

O IA 20.0.0.0/8 [110/128] via 30.0.0.1 serial 3/0

30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks

C 30.0.0.0/8 is directly connected, serial 3/0

C 30.0.0.1/32 is directly connected, serial 3/0

C 40.0.0.0/8 is directly connected fastethernet 0/0

C 172.16.0.0/16 is directly connected, Loopback 0.

Ping output

Pinging 40.0.0.10 with 32 bytes of data.

Request timed out.

Reply from 40.0.0.10 bytes=32 time=2ms TTL=125

Reply from 40.0.0.10 bytes=32 time=9ms TTL=125

Reply from 40.0.0.10 bytes=32 time=10ms TTL=125

Pinging statistics for 40.0.0.10:

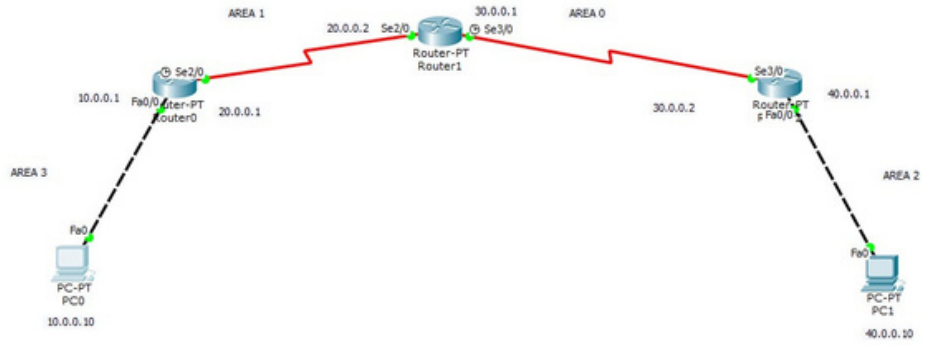
packets: Sent=4, received=3, Lost=1 (25% loss),

Approx round trip in ms:

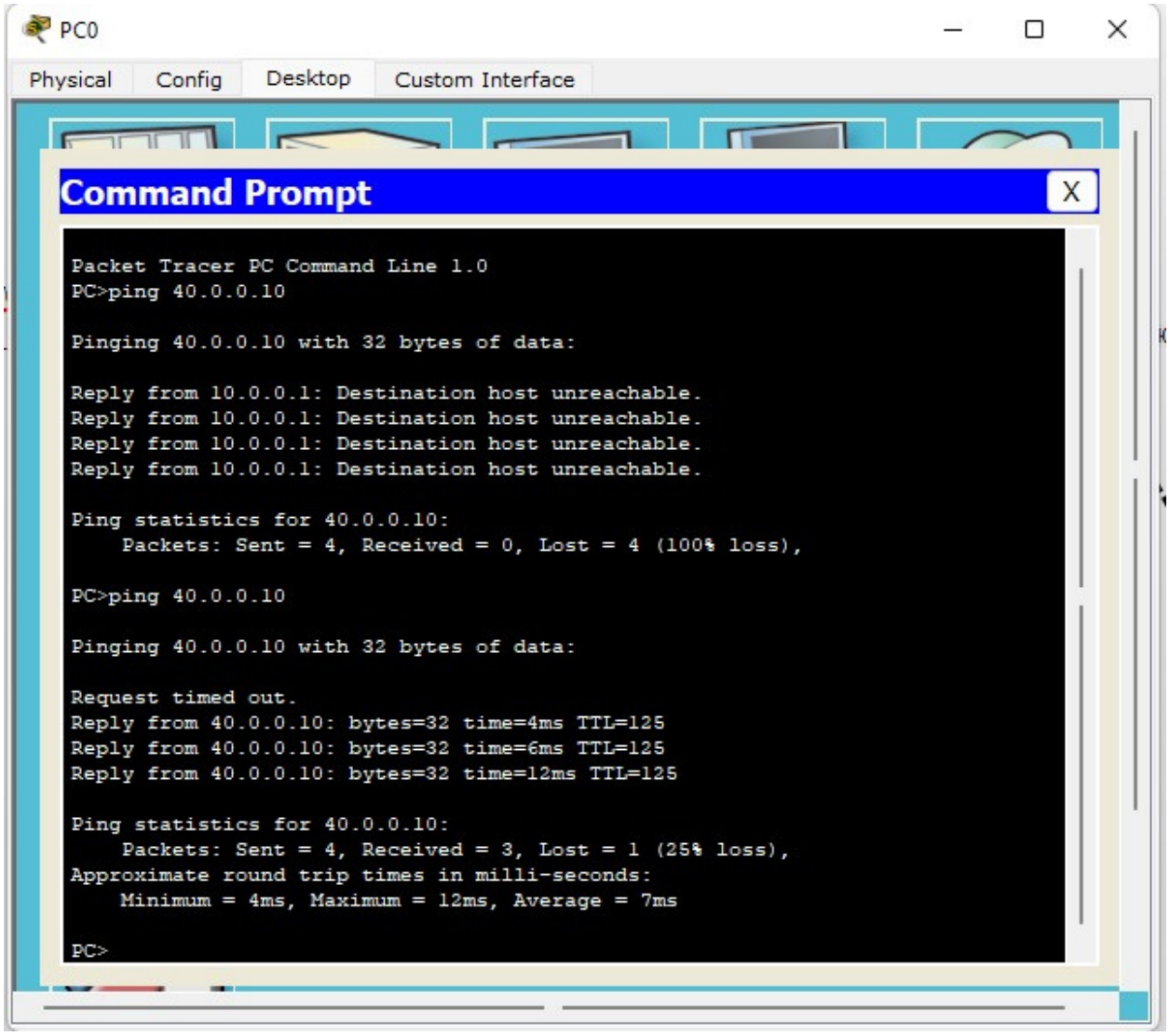
Min=2ms, Max=10ms, Average=7ms.

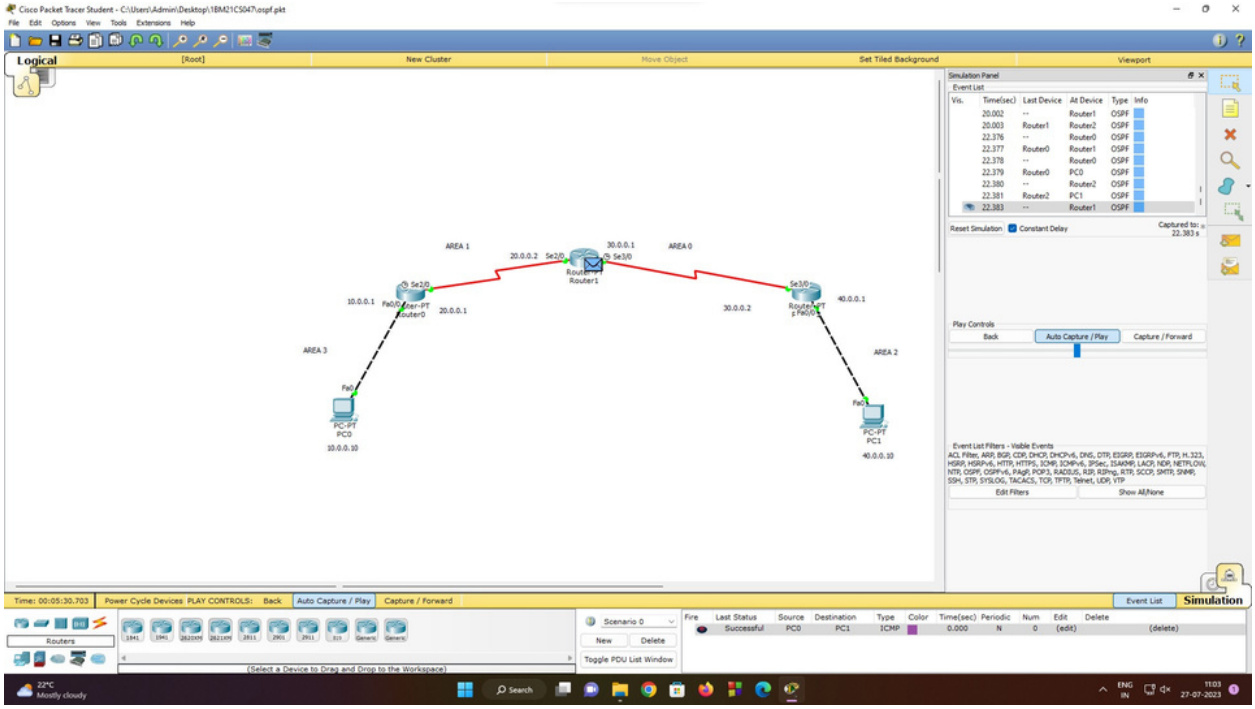
3/8/2023

TOPOLOGY:



OUTPUT:




Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1BM21CS047\ospf.pkt
Logical
AREA 1
AREA 0
AREA 3
AREA 2
20.0.0.2
30.0.0.1
10.0.0.1
20.0.0.1
30.0.0.2
40.0.0.1
10.0.0.10
40.0.0.10
Simulation Panel
Event List
Play Controls
Back
Auto Capture / Play
Capture / Forward
Simulation