Exercise – 9 SINGLEAREA OSPF

Aim

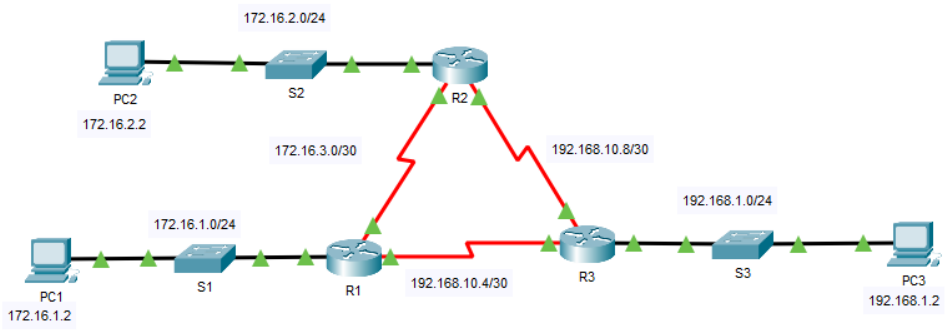
To Configuring single area OSPF

Pre-requisite:

Open Shortest Path First (OSPF) protocol

Procedure:

1. From the Network Devices category, select routers, and from the devices drag 3 routers into the workspace.
2. Select the End Devices sub-category from End Devices, and drag 3 PCs into the workspace.
3. Connect all the devices using crossover cables via switches and connect routers using serial DTE cables.

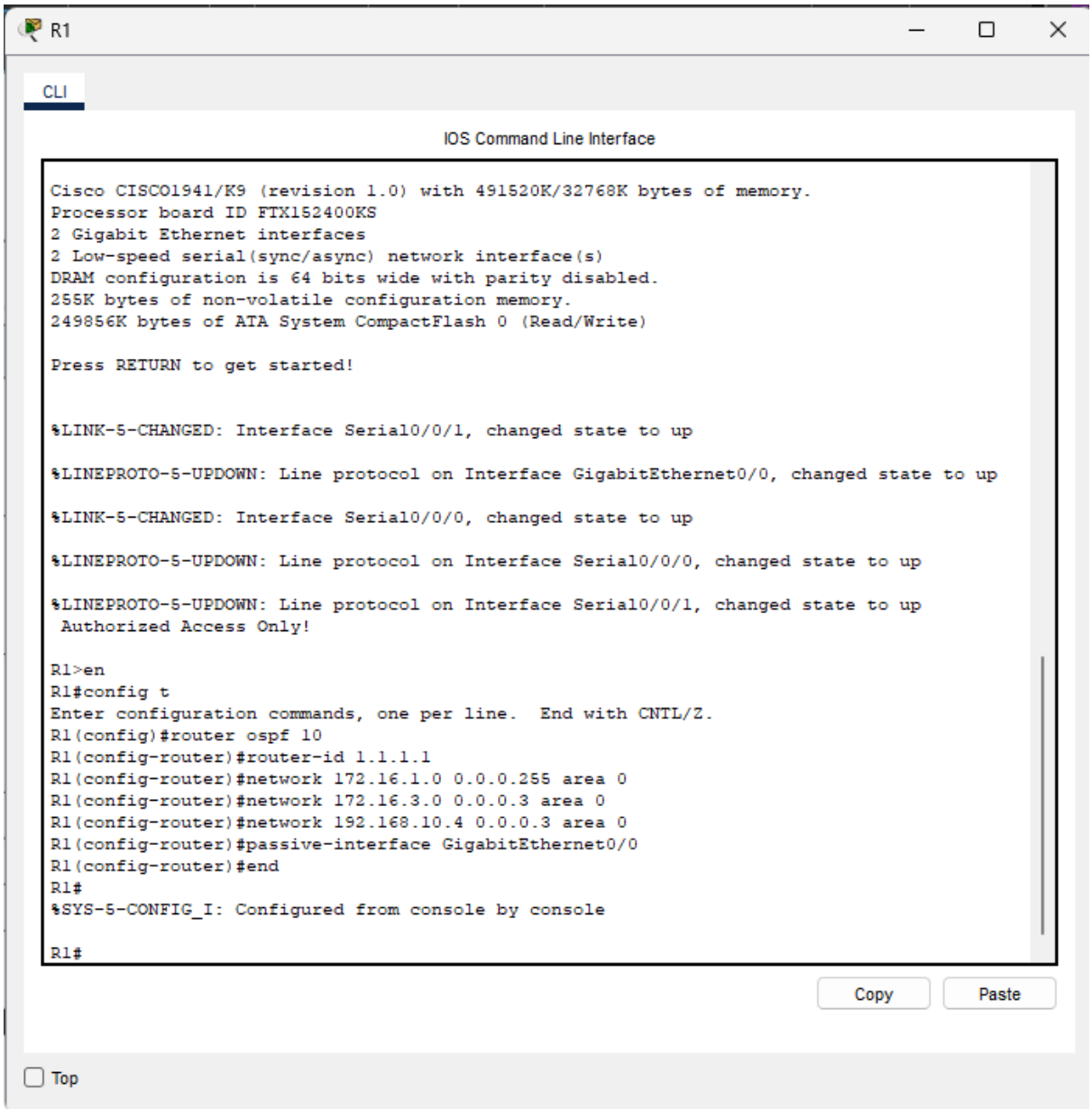


4. Assign the ip-addresses using the address table given below

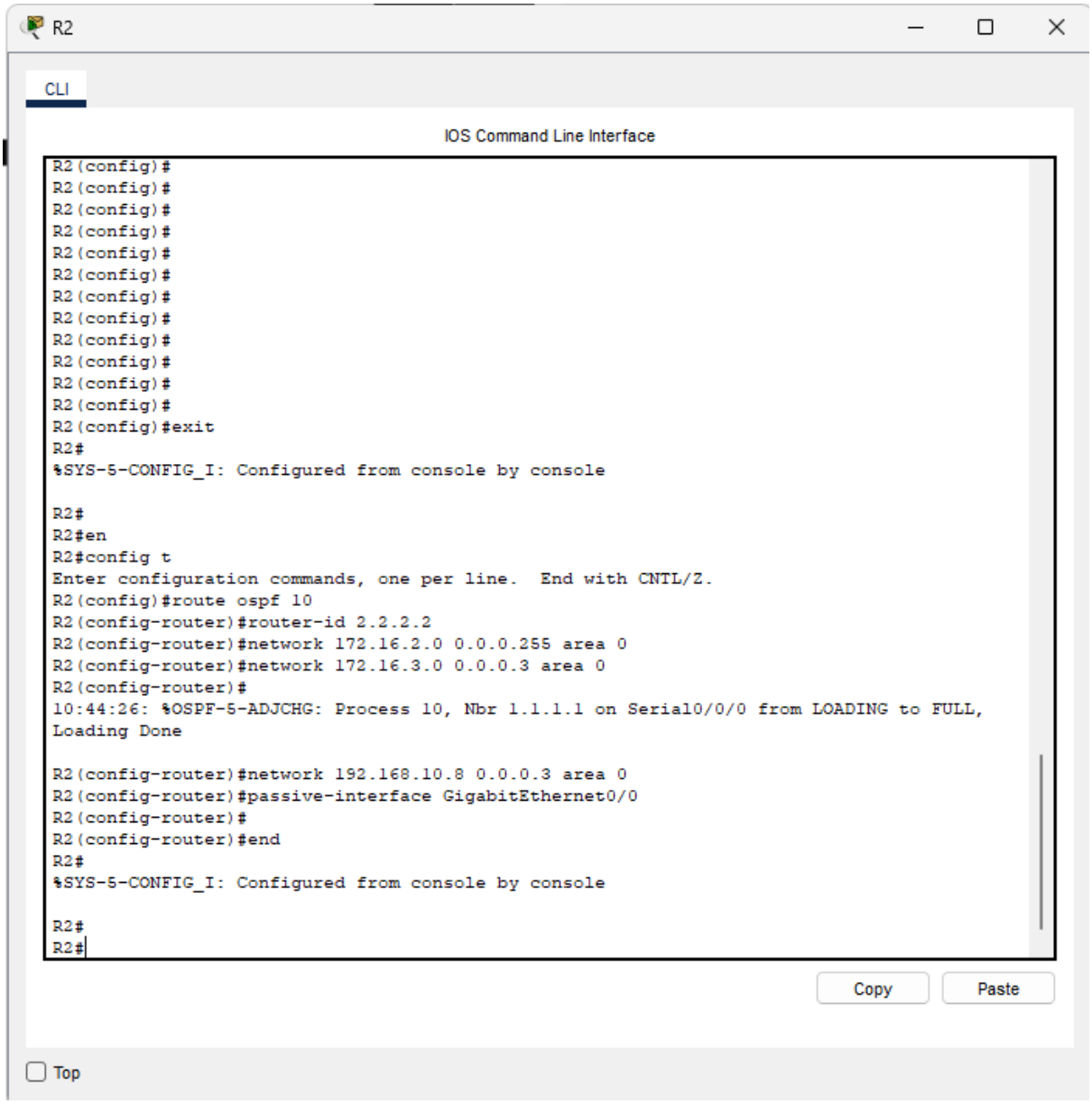
Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	G0/0	172.16.1.1	255.255.255.0
	S0/0/0	172.16.3.1	255.255.255.252
	S0/0/1	192.168.10.5	255.255.255.252
R2	G0/0	172.16.2.1	255.255.255.0
	S0/0/0	172.16.3.2	255.255.255.252
	S0/0/1	192.168.10.9	255.255.255.252
R3	G0/0	192.168.1.1	255.255.255.0
	S0/0/0	192.168.10.6	255.255.255.252
	S0/0/1	192.168.10.10	255.255.255.252
PC1	NIC	172.16.1.2	255.255.255.0
PC2	NIC	172.16.2.2	255.255.255.0
PC3	NIC	192.168.1.2	255.255.255.0

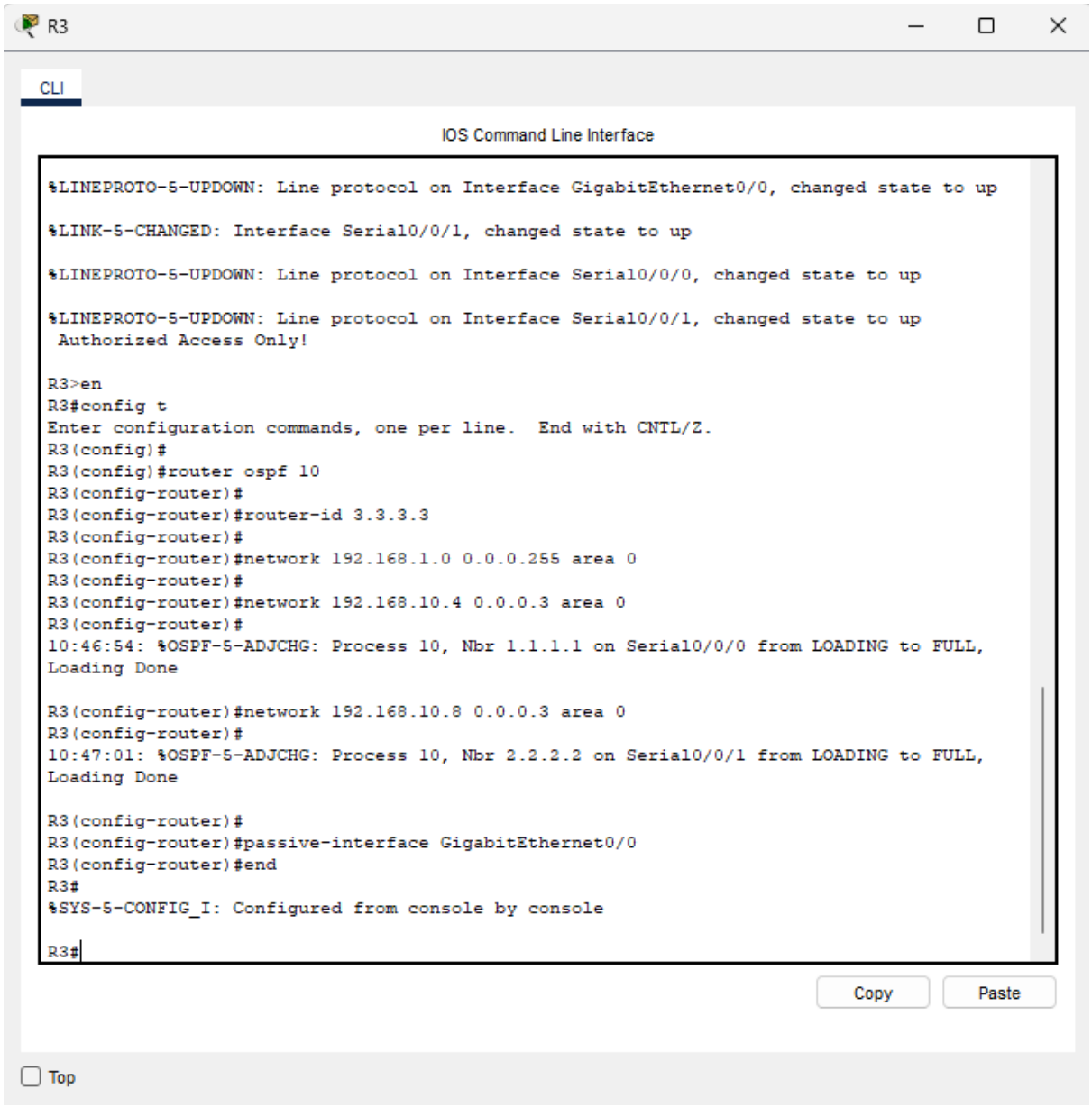
5. Configure the OSPF on the routers R1 using the following commands
    - enable
    - conf t
    - router ospf 10
    - router-id 1.1.1.1
    - network 172.16.1.0 0.0.0.255 area 0
    - network 172.16.3.0 0.0.0.3 area 0
    - network 192.168.10.4 0.0.0.3 area 0
    - passive-interface GigabitEthernet0/0
    - end



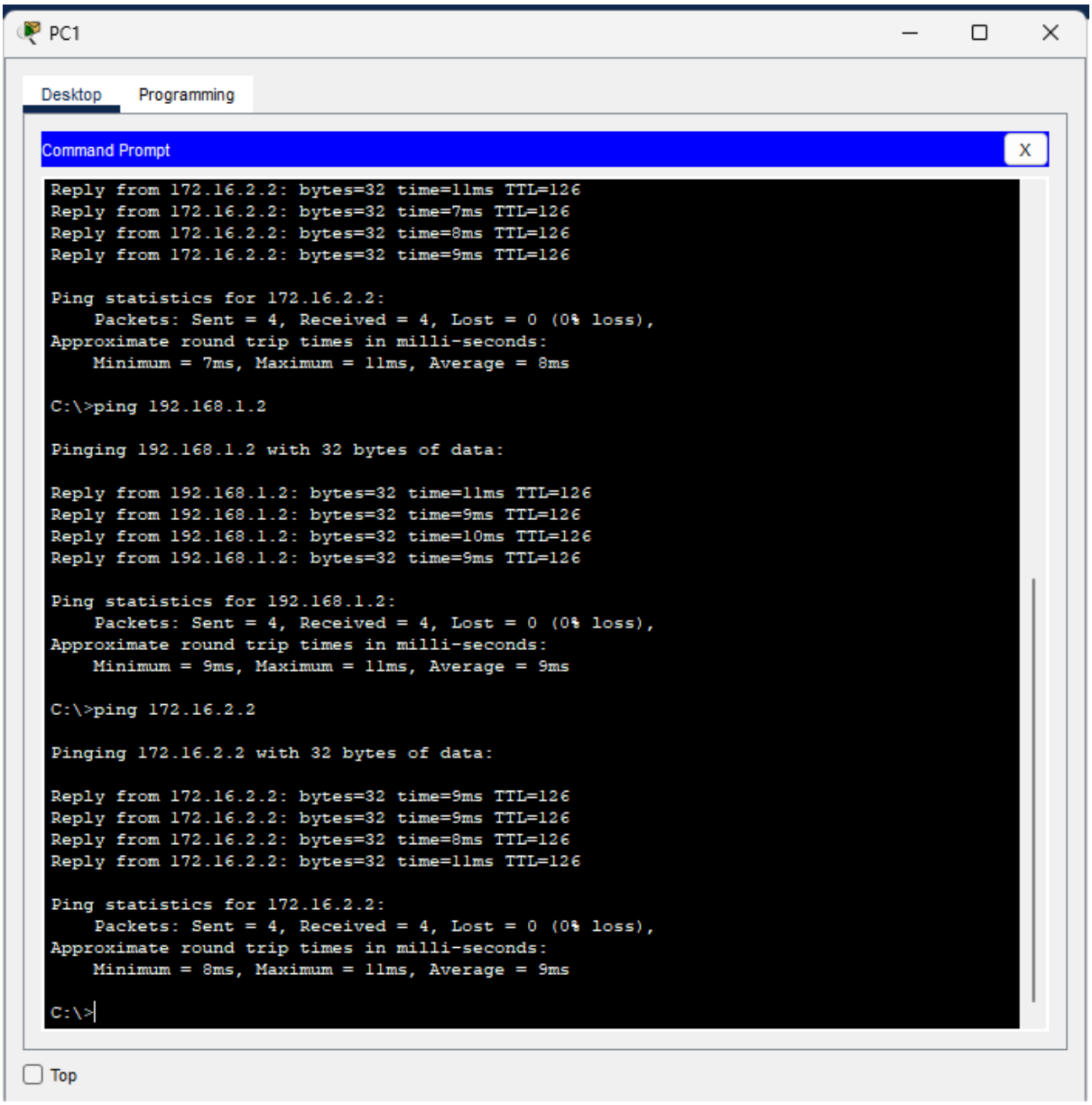
6. Similarly Configure the router R2 with following commands
    - enable
    - conf t
    - router ospf 10
    - router-id 2.2.2.2
    - network 172.16.2.0 0.0.0.255 area 0
    - network 172.16.3.0 0.0.0.3 area 0
    - network 192.168.10.8 0.0.0.3 area 0
    - passive-interface GigabitEthernet0/0
    - end



7. Similarly Configure the router R3 with following commands
    - enable
    - conf t
    - router ospf 10
    - router-id 3.3.3.3
    - network 192.168.1.0 0.0.0.255 area 0
    - network 192.168.10.4 0.0.0.3 area 0
    - network 192.168.10.8 0.0.0.3 area 0
    - passive-interface GigabitEthernet0/0
    - end



8. Run the ping command from PC1 to check the connection.
    - ping 192.168.1.2
    - ping 172.16.2.2



Conclusion

We have successfully configured single area OSPF using cisco packet tracer.