Experiment No.06

PART A
(PART A : TO BE REFFERED BY STUDENTS)

A.1—Aim:

Study and Implementation of shortest path routing algorithm (Static)

A.2--- Prerequisite:

Routing Algorithms , Graphs

A.3--- Outcome:

After successful completion of this experiment students will be able to:

1. Understand how routing algorithm works.
2. Implement Shortest path routing algorithm.

A.4--- Procedure:

Task:

1. To connect client to server
2. See the simulation of sent and received packet using general and complex PDU
3. Check the OSI layers of the packet
4. Observe the output and complete PART B of lab manual
5. Save and close the file and name it as **EXP 6_ your Roll no.**

(PART - B)

(TO BE COMPLETED BY STUDENTS)

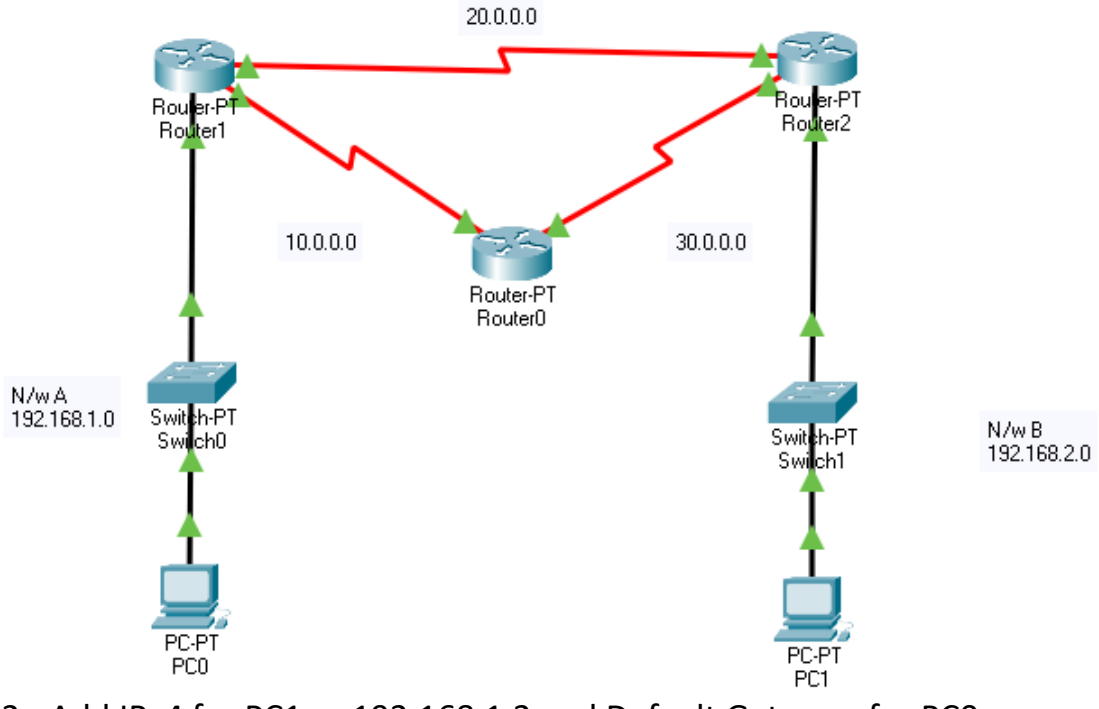
(Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the Blackboard or emailed to the concerned lab in charge faculties at the end of the practical in case there is no Black board access available)

Roll. No. A016	Name: Varun Mahendra Khadayate
Class B.Tech CsBs	Batch: 1
Date of Experiment: 26-02-2022	Date of Submission:27-03-2022

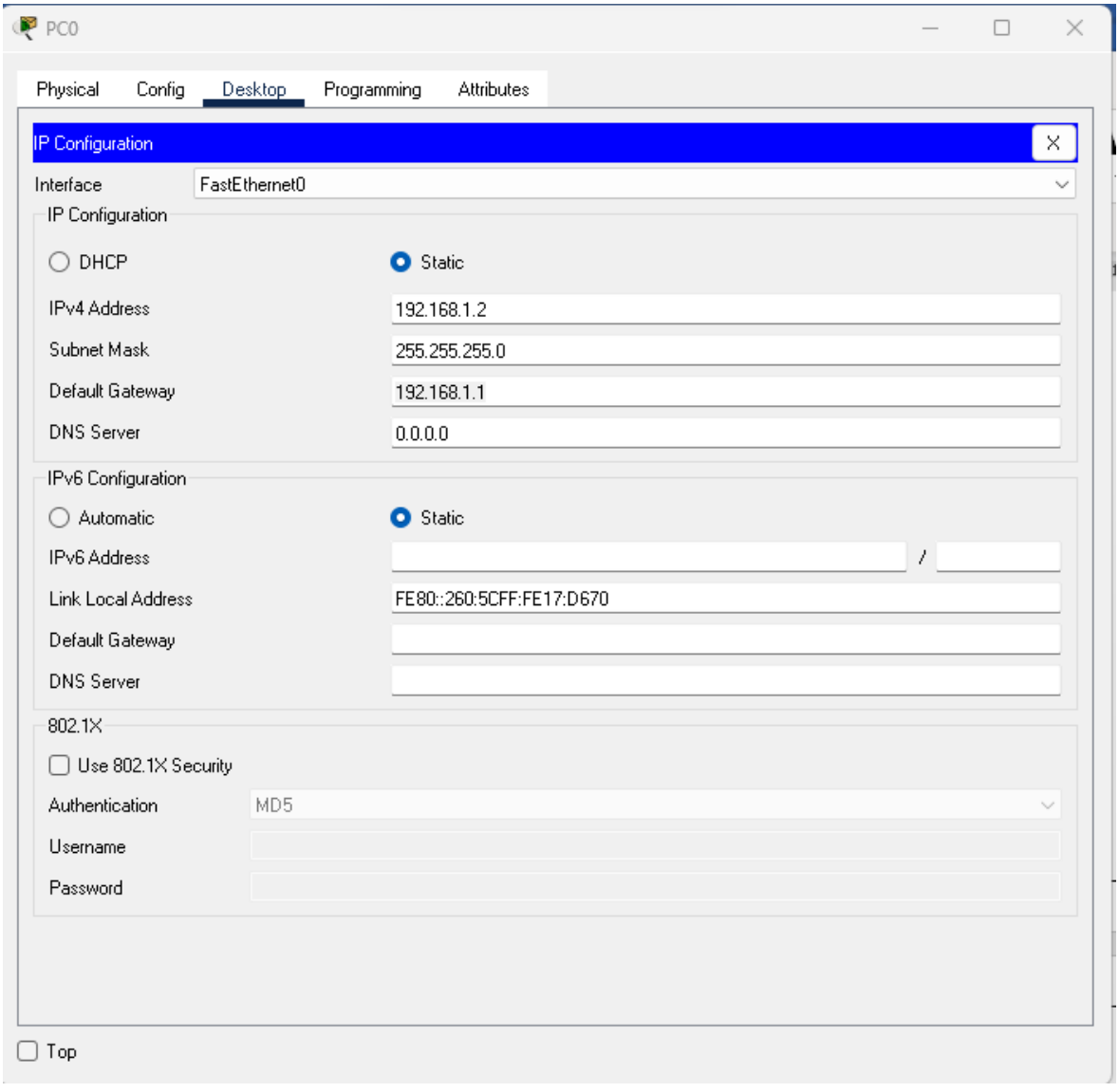
B.1: Procedure of performed experiment

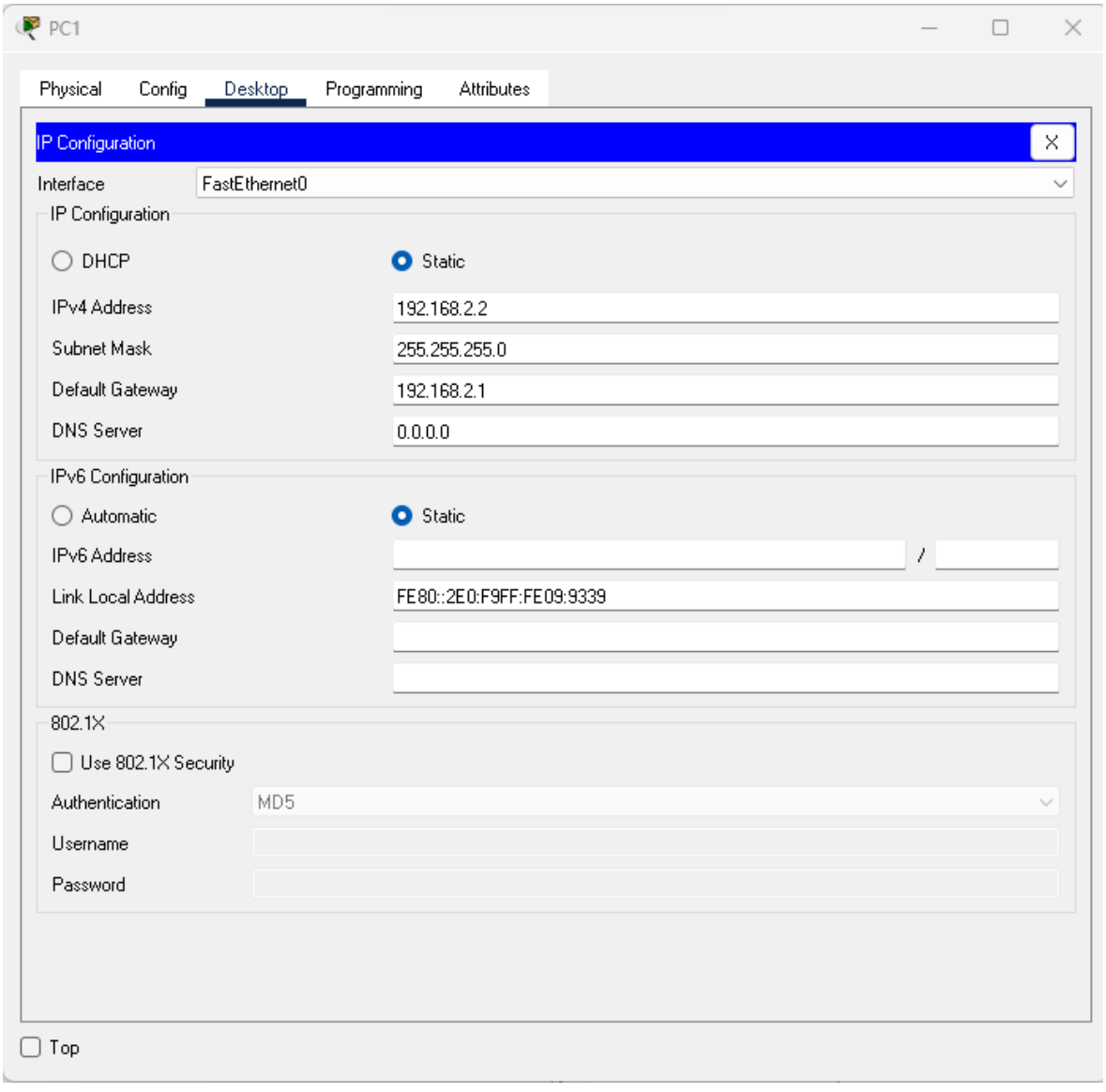
(Students are expected to write the procedure of performed experiment)

1. In Cisco Packet Tracer, create a connection in Logical Mode.

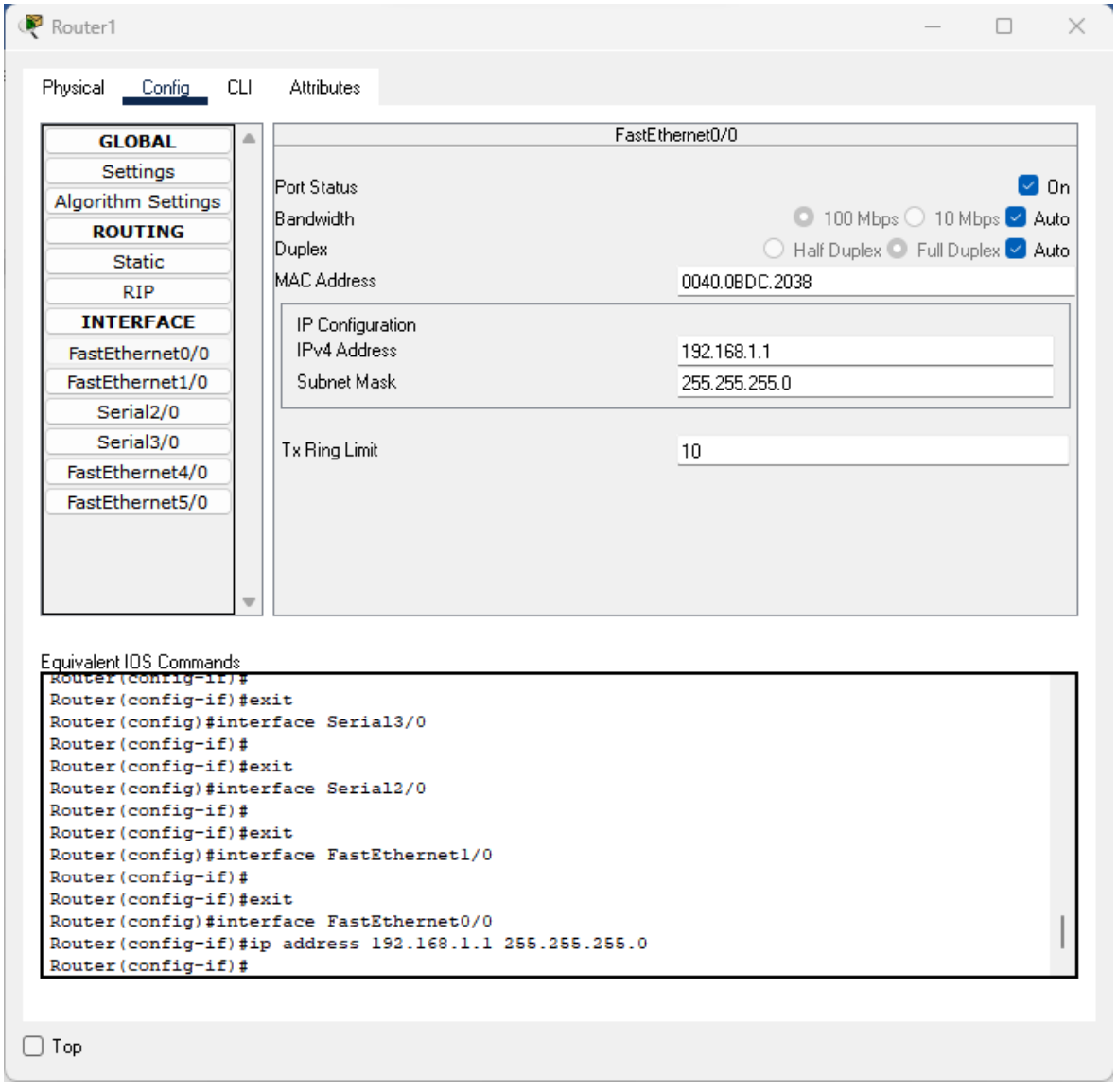


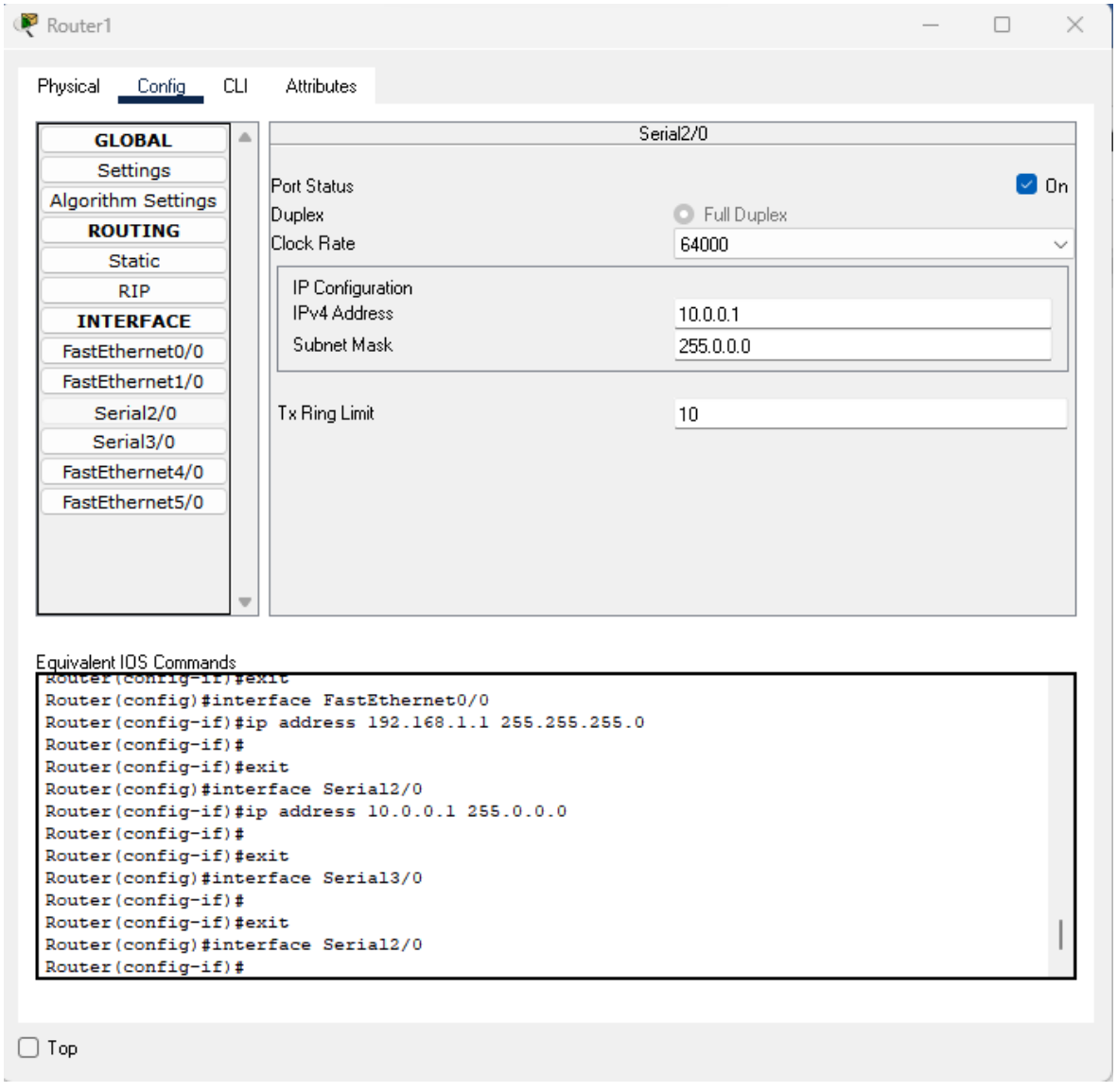
2. Add IPv4 for PC1 as 192.168.1.2 and Default Gateway for PC0 as 192.168.1.1 also do the same for PC01 with IPv4 as 192.168.2.2 and Default Gateway as 192.168.2.1

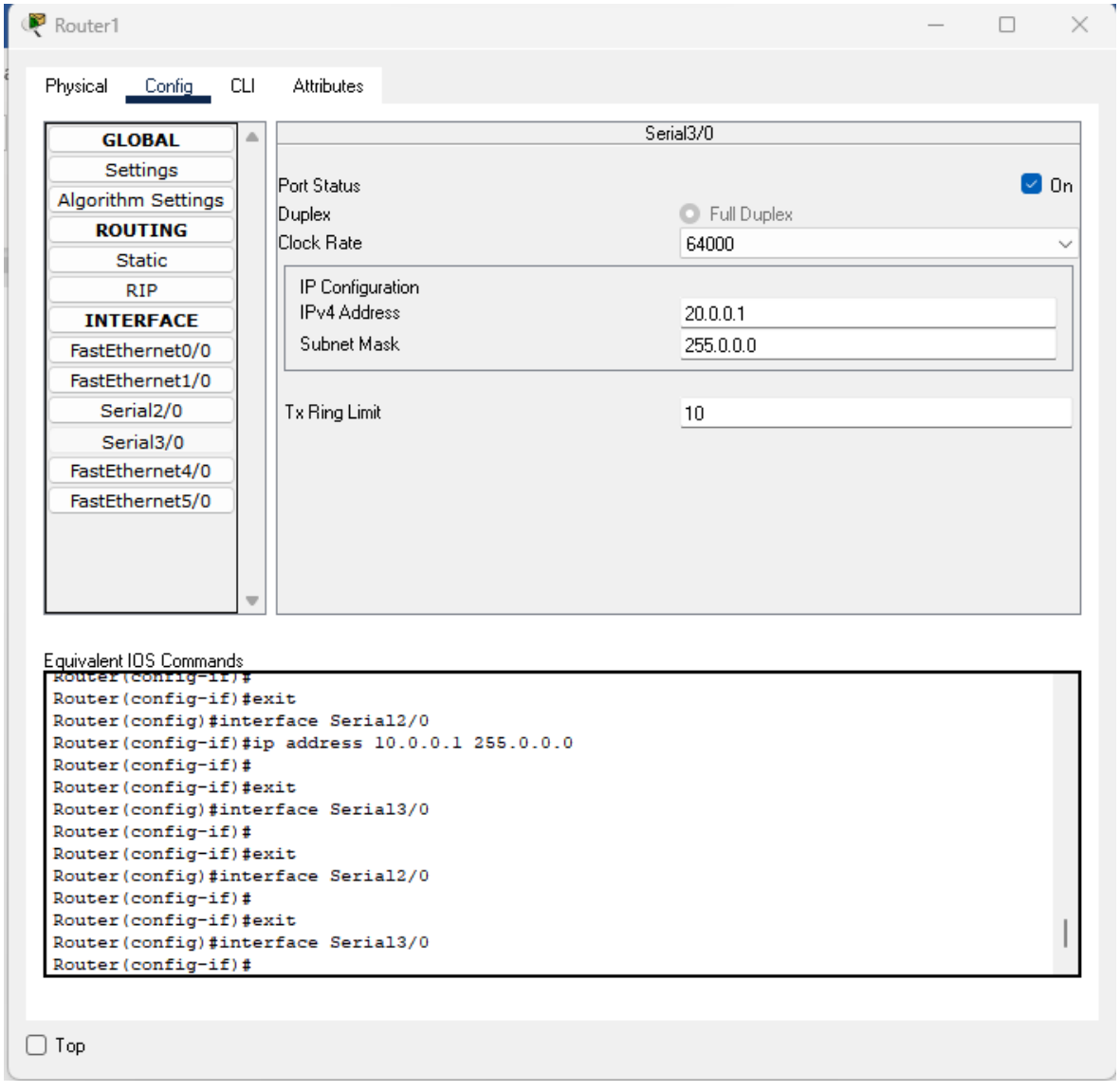

PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::260:5CFF:FE17:D670
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top



3. In Router1 for FastEthernet0/0 add IPv4 address as 192.168.1.1 and click on ON, for Serial2/0 add IPv4 address as 10.0.0.1 with clock at 64000 and click on ON, for Serial3/0 add IPv4 address as 20.0.0.1 with clock at 64000 and click on ON


Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
FastEthernet0/0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0040.0BDC.2038
IP Configuration
IPv4 Address
192.168.1.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#
Top


Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Serial2/0
Port Status
On
Duplex
Full Duplex
Clock Rate
64000
IP Configuration
IPv4 Address
10.0.0.1
Subnet Mask
255.0.0.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Top



4. Rin the below commands in CLI for Router0

Router1

Physical Config CLI Attributes

IOS Command Line Interface

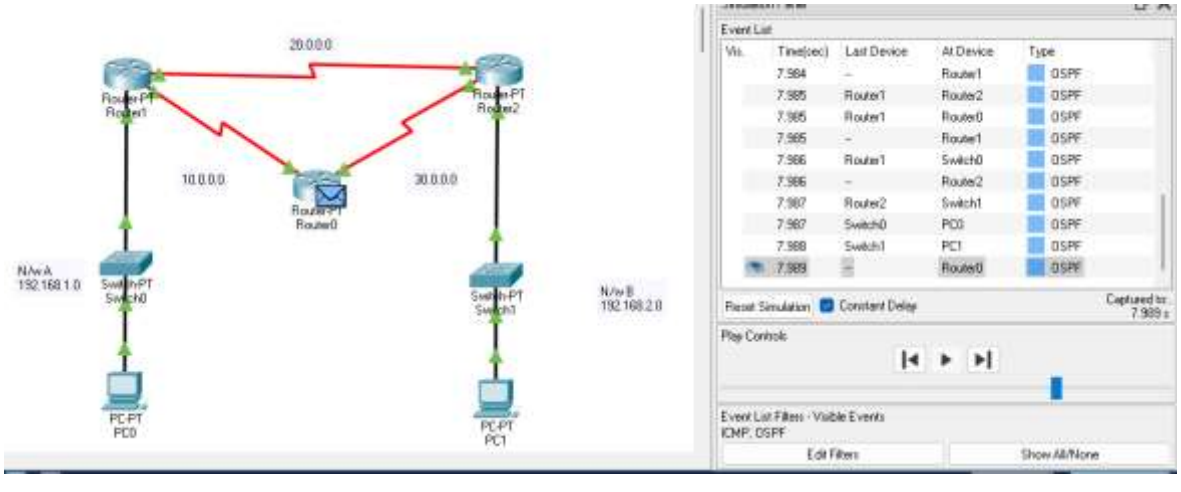
```
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#
%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 Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial3/0
Router(config-if)#exit
Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#network 192.168.1.1 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

5. Run the Simulation with only ICMP and OSPF working



B.2: Observations and Learning's:

(Students are expected to comment on the output obtained with clear observations and learning for each task/ sub part assigned)

All the Task were able to be completed and the Simulation was a Success, the Output received was the desired one.

B.3: Conclusion:

(Students must write the conclusion as per the attainment of individual outcome listed above and learning/observation noted in section B.2)

Hence, we were able to Study and Implementation of shortest path routing algorithm (Static)