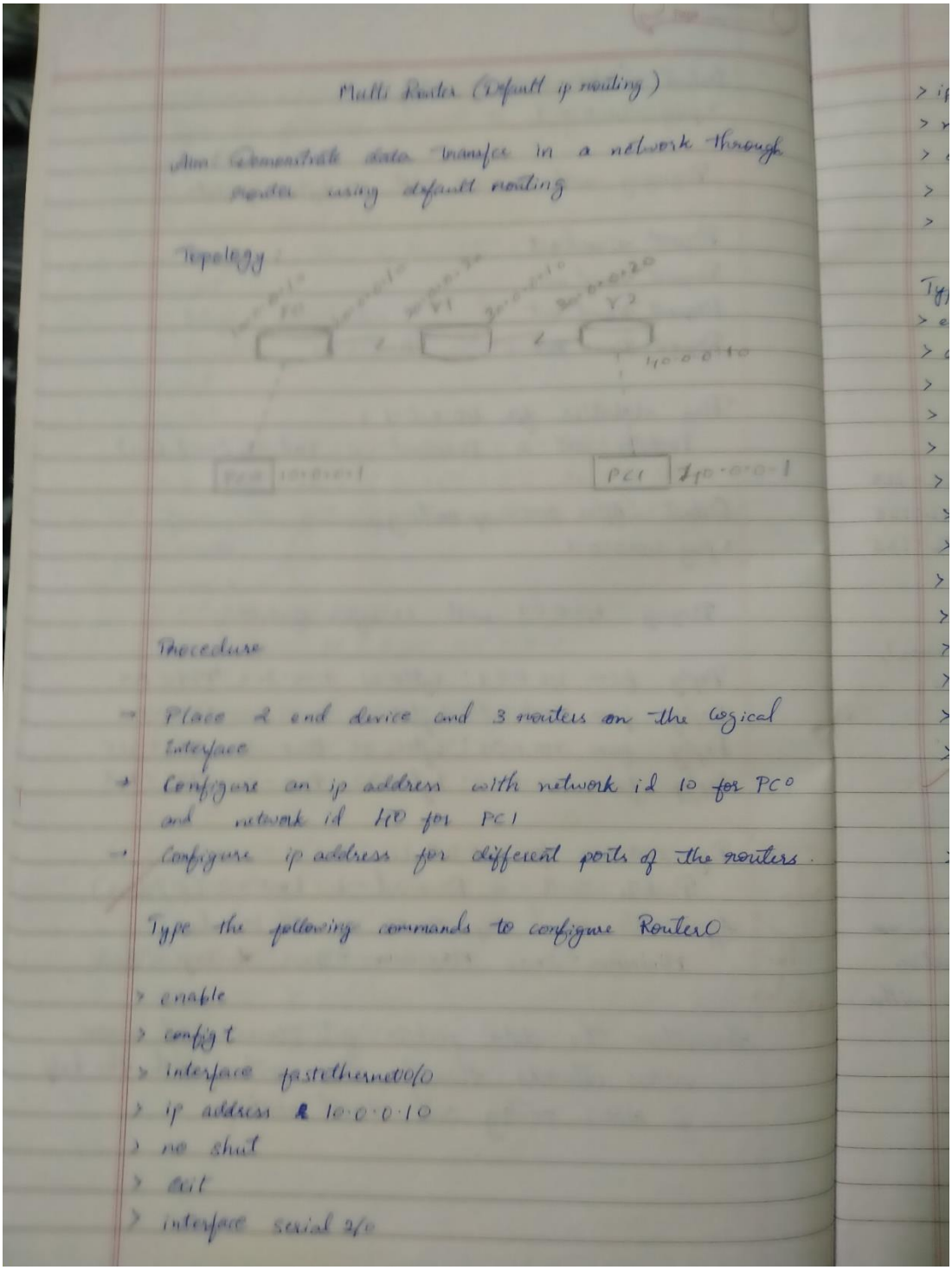
Experiment 3:

Default Routing



Multi Router (Default ip routing)

Aim: To demonstrate data transfer in a network through router using default routing

Topology

PC0 10.0.0.1

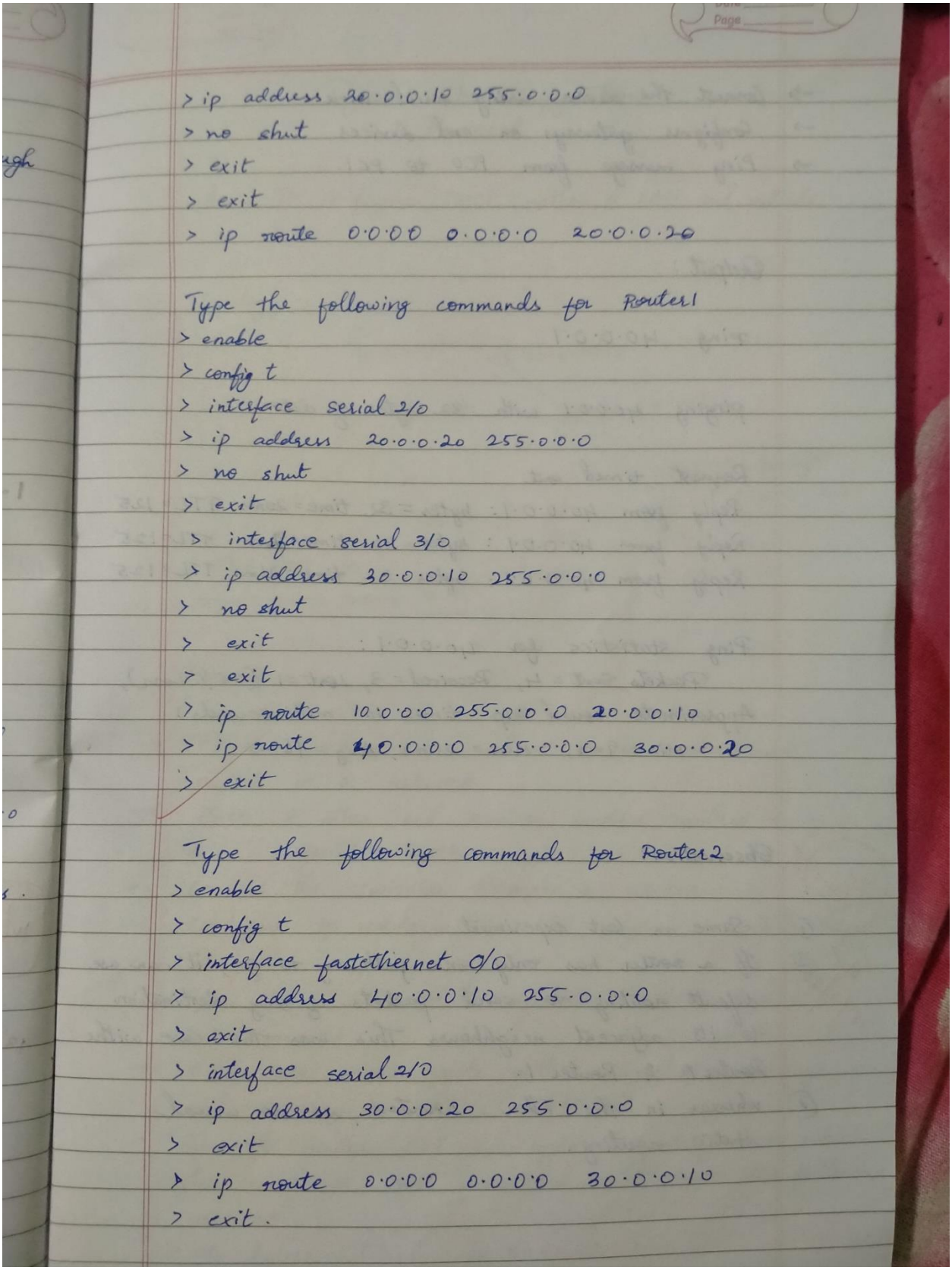
PC1 10.0.0.1

Procedure

- Place 2 end device and 3 routers on the logical Interface
- Configure an ip address with network id 10 for PC0 and network id 10 for PC1
- Configure ip address for different ports of the routers.

Type the following commands to configure Router0

> enable
> config t
> interface fastethernet0/0
> ip address 10.0.0.10
> no shut
> exit
> interface serial 2/0



> ip address 20.0.0.10 255.0.0.0
> no shut
> exit
> exit
> ip route 0.0.0.0 0.0.0.0 20.0.0.20

Type the following commands for Router1
> enable
> config t
> interface serial 2/0
> ip address 20.0.0.20 255.0.0.0
> no shut
> exit
> interface serial 3/0
> ip address 30.0.0.10 255.0.0.0
> no shut
> exit
> exit
> ip route 10.0.0.0 255.0.0.0 20.0.0.10
> ip route 40.0.0.0 255.0.0.0 30.0.0.20
> exit

Type the following commands for Router2
> enable
> config t
> interface fastethernet 0/0
> ip address 40.0.0.10 255.0.0.0
> exit
> interface serial 2/0
> ip address 30.0.0.20 255.0.0.0
> exit
> ip route 0.0.0.0 0.0.0.0 30.0.0.10
> exit.

→ Connect the devices using serial wire
→ Configure gateways on end devices
→ Ping message from PC0 to PC1

Output:

Ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data

Request timed out
Reply from 40.0.0.1: bytes = 32 time = 20ms TTL = 125
Reply from 40.0.0.1: bytes = 32 time = 9ms TTL = 125
Reply from 40.0.0.1: bytes = 32 time = 21ms TTL = 125

Ping statistics for 40.0.0.1:
Packets Sent = 4, Received = 3, Lost = 1 (25% Loss),
Approximate round trip times in milli seconds:
Min = 9ms, Max = 21 ms, Avg = 16 ms

Observation:

① Same as last experiment
② If a router has only one pathway to go, it can use default routing to send packets of any destination to its adjacent neighbours. This was the case with Router 0 & Router 1.
③ whereas in the other 2 routers, we do usual static routing.

Topology and output screenshots: