Experiment- 3. → the gateway of PC should be same as the IP address of router
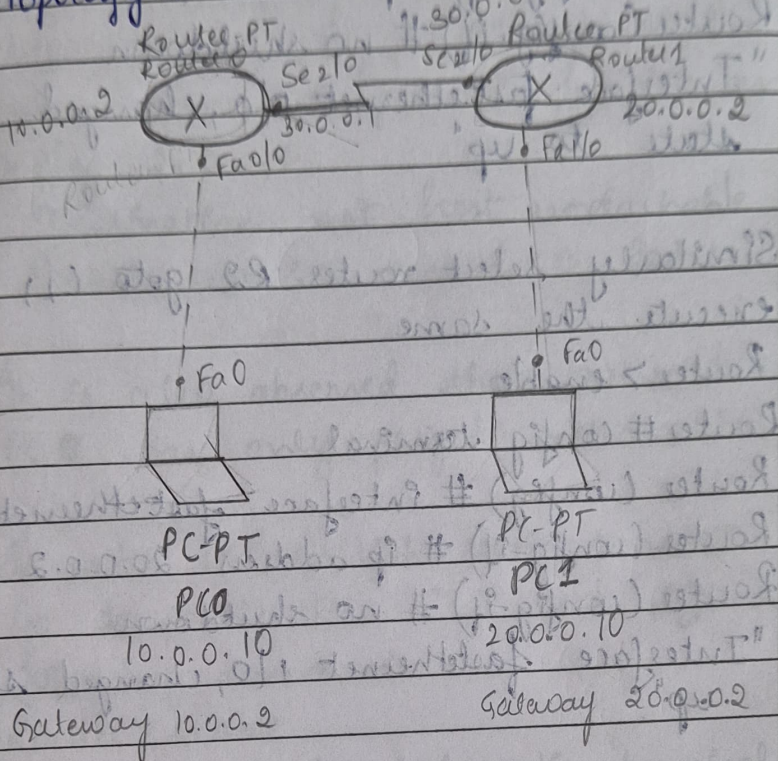
Aim : Configure default route, static route to the Router.

Topology :

Router PT
Router 0
10.0.0.2 (X) Se 2/0
30.0.0.1
Fa0/0

30.0.0.0
Sc 2/0

Router PT
Router 1
(X) 20.0.0.2
Fa1/0

Fa0

Fa0

PC-PT
PC0
10.0.0.10

PC-PT
PC1
20.0.0.10

Gateway 10.0.0.2

Gateway 20.0.0.2

Procedure :

I   Select a generic router R1

II Connect an end device PC1 to router R1 through parallel connection fastethernet 0/0.

III Configure PC 1 with ip address 10.0.0.10 and gateway 10.0.0.2

IV Similarly select another generic router R2 and connect an end device PC2 fastethernet 1/0.

V   Configure PC 2 with ip address 20.0.0.10 and gateway 20.0.0.2.

Now select router R1 go to CLI and execute the following

Router > enable
Router # config terminal
Router (config) # interface fastethernet 0/0
Router (config-if) # ip address 10.0.0.2 255.0.0.0
Router (config-if) # no shutdown
"Interface fast ethernet 0/0, changed
state to up"

Similarly select router R2 goto (1) and
execute the same
Router > enable
Router # config terminal
Router (config) # interface fastethernet 1/0
Router (config-if) # ip address 20.0.0.2 255.0.0.0
Router (config-if) # no shutdown
"Interface fastethernet 1/0, changed state to
up".

Hence the connection between Router and
end devices is established.

Now connect router R1 with router R2
using serial cable (serially connected)
To setup connection b/w routers again,
Select router R1 and go to CLI
Router (config) # interface serial 2/0
Router (config-if) # ip address 30.0.0.1 255.0.0.0
Router (config-if) # no shutdown

Select router R2 and go to CLI
Router (config) # interface serial 2/0
Router (config-if) # ip address 30.0.0.2 255.0.0.0
Router (config-if) # no shutdown

"Interface serial 2/0 changed state to up"

Observations :

→ After setting up the above mentioned topology
Now try to ping PC1 with PC0
open command prompt for PC1 and type
→ ping 20.0.0.1

Destination not host unreachable
Packets sent : 4 received : 0 lost : 4 loss : 100%

It is also observed that the end system
PC0 was only pinged with router R0 only

In order to establish static connection
Go to router 0's CLI and type the
following commands
Router > enable
Router # ~~config terminal~~ config terminal
Router (config) # ip route 20.0.0.0 255.0.0.0
                              30.0.0.2

Then go to router 2's CLI and type the
following commands
Router > enable
Router # config terminal
Router (config) # ip route 10.0.0.0 255.0.0.0
                              30.0.0.1

So now check if all the connections are done
by going to each router's CLI and typing
show ip route.
23/10/24.

After this again go to PC1 and
now type in CP

ping 20.0.0.10

Packets : sent = 4 , Received = 4 , Lost = 0