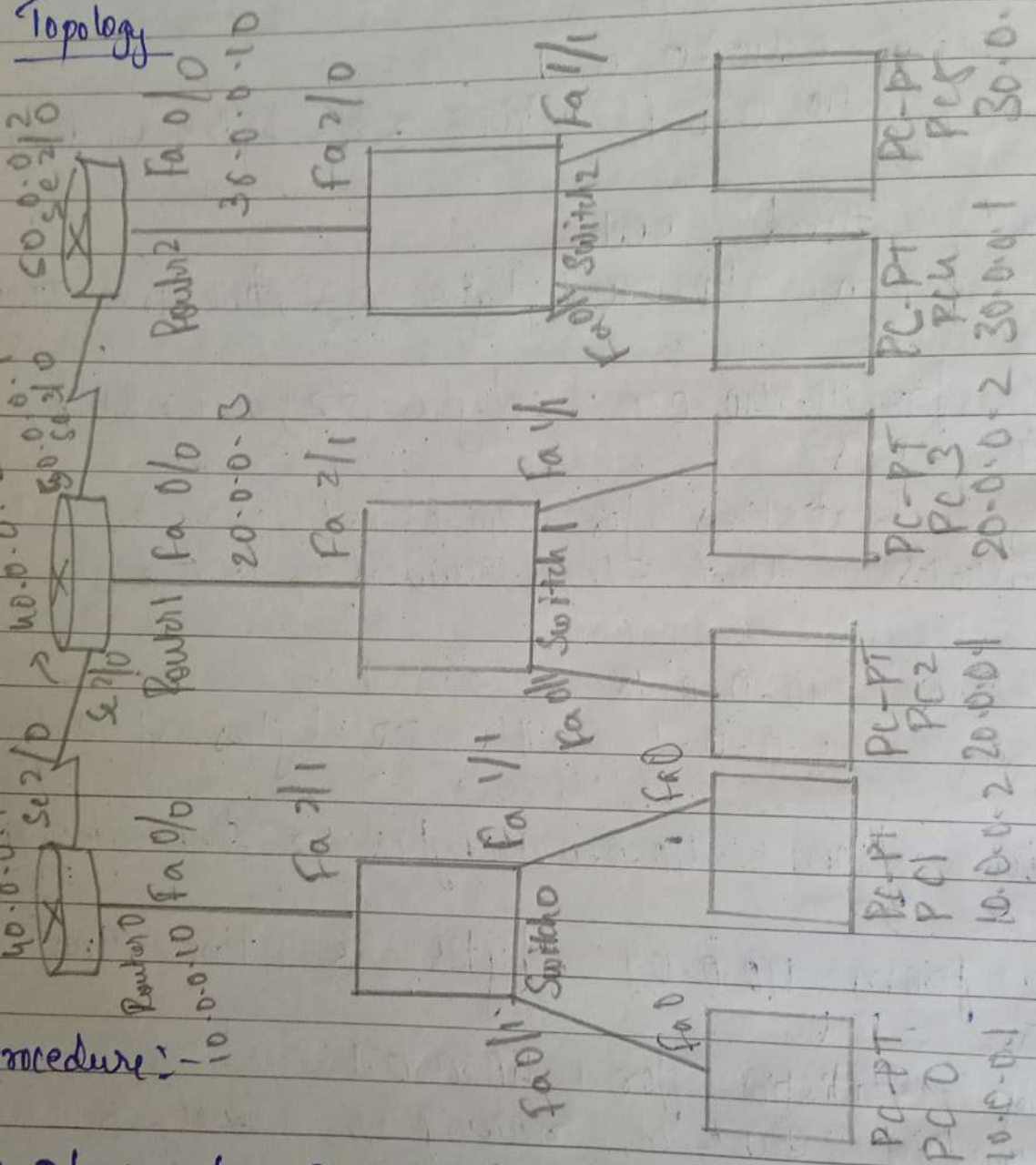
Lab-3

AIM:- Configuring default route to the router

Topology



procedure:-

→ place 6 generic PC's, 3 switches & 3 routers and connect two PC's to each switch with copper straight through wire and each switch is connected to one router with a copper straight through wire and the 3 routers are connected among themselves by

router

serial DCE Cable and the nodes are placed for all the devices & networks

→ PC is clicked to set attributes for a PC and each PC has 3 attributes which are the IP address Subnet mask & the gateway & all the three are set according to the nodes placed. thus process is done for all the 6 PC's.

→ For Router 1 the Configs are done in the Command line interface (CLI). The IP address and Subnet mask are set for both the interface fastethernet 0/0 as 10-0-0-10 & 255.0.0.0 and Serial 2/0 as 40.0.0.1 & 255.0.0.0 Router 2 is default router for Router 1 & this is done by the Cmd ip route 0.0.0.0 0.0.0.0 40.0.0.2

→ For Router2 the IP address & Subnet mask are set for all 3 interfaces — fast ethernet 0/0 as 20.0.0.3 & 255.0.0.0 & Serial 2/0 as 40.0.0.2 & 255.0.0.0 and Serial 3/0 as 50.0.0.1 & 255.0.0.0

→ Router 2 doesnot have any default router & static routing is done for the

network 10 & 40 by the following cmd
ip route 10.0.0.0 255.0.0.0 40.0.0.1
ip route 30.0.0.0 255.0.0.0 50.0.0.2

→ Router 3 is configured in both the interfaces with ip address & subnet mask as fast ethernet 0/0 with 30.0.0.10 & 255.0.0.0 & serial 2/0 with 50.0.0.2 & 255.0.0.0 - the default router for router 3 router 2 & thus set by the cmd:- ip route 0.0.0.0 0.0.0.0 50.0.0.1

→ ping cmd is executed from 10.0.0.1 to 20.0.0.1 & from 10.0.0.1 to 30.0.0.2.

Observation:-

Learning Outcome:-

→ one router cannot have two default router.
→ The default router for first router is the middle router because any packets which have to be delivered will go to the middle router
→ The default router for 3rd router is the middle router for the same reason.

→ The middle router does not have any default router because if one of the router is made default then there is a chance that the packets which are to be sent to the switch are sent to the router.

~~Router~~ :-

Result :-

ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Request timed out

Reply from 20.0.0.1 : bytes = 32, time = 1ms, TTL = 126

Reply from 20.0.0.1 : bytes = 32, time = 2ms, TTL = 126

Reply from 20.0.0.1 : bytes = 32, time = 6ms, TTL = 126

ping 30.0.0.2

pinging 30.0.0.2 with 32 bytes of data

Request timed out

Reply from 30.0.0.2 : bytes = 32, time = 4ms, TTL = 125

Reply from 30.0.0.2 : bytes = 32, time = 4ms, TTL = 125

Reply from 30.0.0.2 : bytes, time = 4ms, TTL = 126