Experiment 7: Routing using RIP

1. Aim:

a. To understand routing by configuring RIP in cisco router on packet tracer.
b. To demonstrate routing by configuring RIP on Cisco router (Hardware).

2. Tools Used: Cisco packet tracer, Cisco Router and Switch (Hardware)

3. Related Theory:

Network routing is the process of selecting a path across one or more networks. The principles of routing can apply to any type of network, from telephone networks to public transportation. In packet-switching networks, such as the Internet, routing selects the paths for Internet Protocol (IP) packets to travel from their origin to their destination. These

Internet routing decisions are made by specialized pieces of network hardware called routers with the help of routing protocol.

Consider the image below. For a data packet to get from Computer A to Computer B, should it pass through networks 1, 3, and 5 or networks 2 and 4? The packet will take a shorter path through networks 2 & 4, but networks 1, 3, & 5 might be faster at forwarding packets than 2 and 4. These are kinds of choices network routers constantly make.

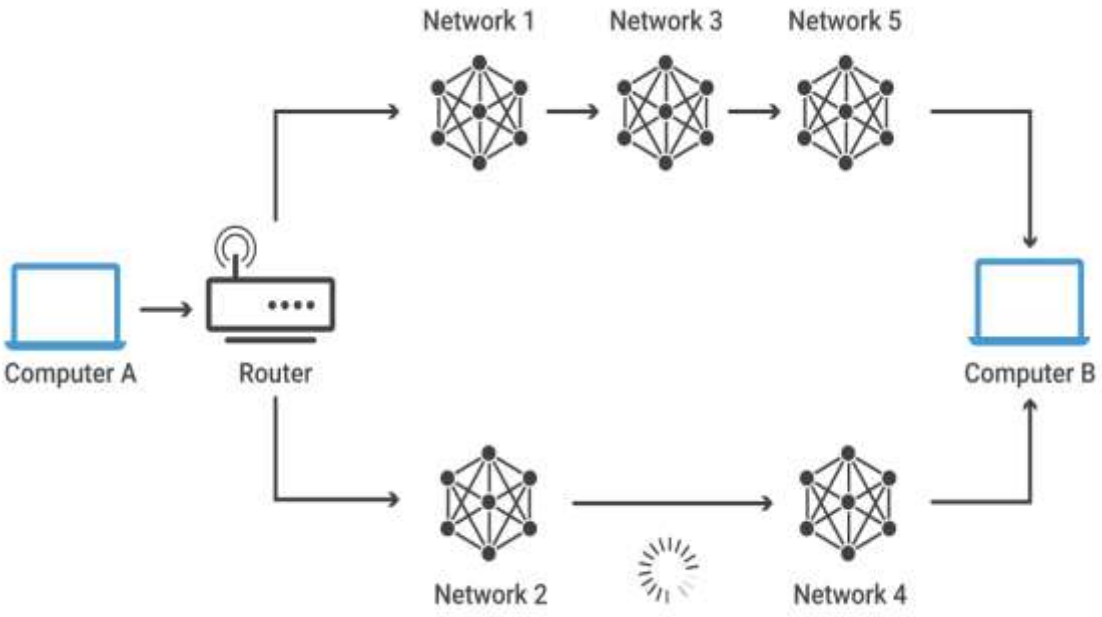

Fig 1: Routing in Packet switched networks

4. Laboratory Exercise:

Setup the network as shown below in fig 2.

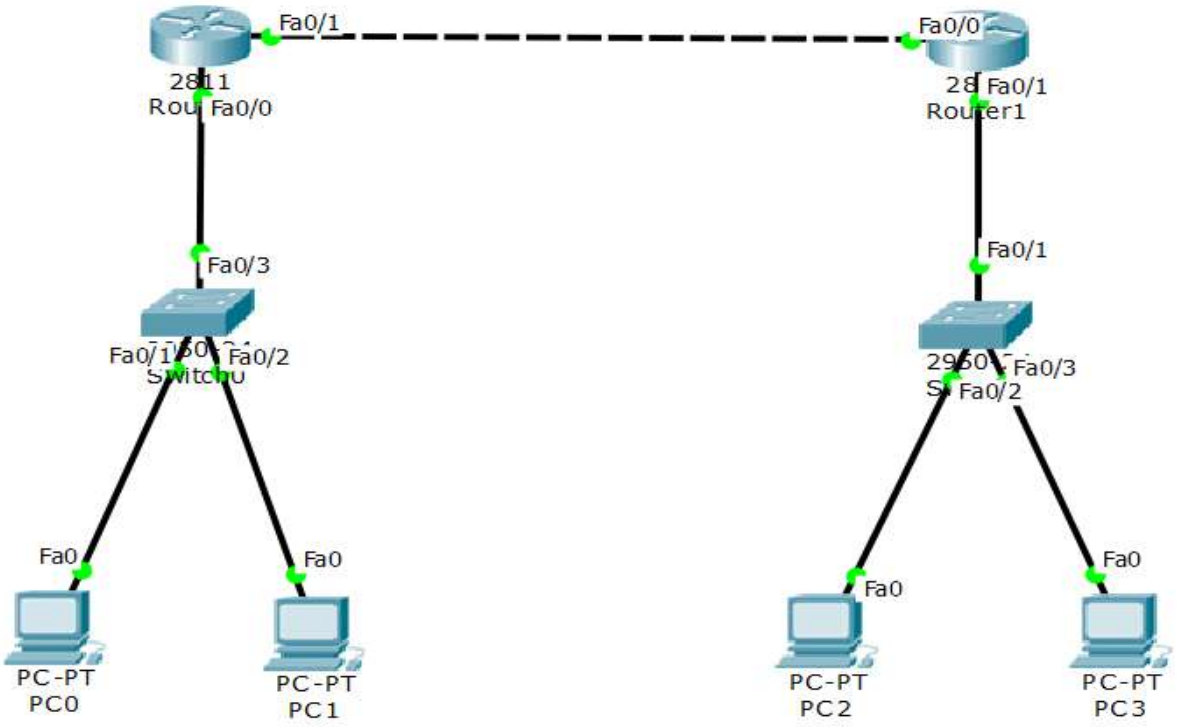

Fig 2: Topology for Routing

Configuration Steps (Cisco Packet Tracer)

1. Assign IP address and default gateway to PCs
2. Configure Router interfaces
3. Check the connectivity between LANs
4. Verify Routers routing table and figure out the information
5. Configure RIP on Routers
6. Verify Routers routing table again and note the difference
7. Read and understand routing table information
8. Verify the connectivity between LANs
9. Capture RIP packets and interpret

Configuration Steps (Hardware)

Same as packet tracer

5. Post-Experiment Exercise:

A. Conclusion

B. Questions:

1. Explain in brief the routing table with the help of example.
2. List different routing protocols and compare them in brief.