CSE 4512 [Computer Networks Lab]
Mid Lab Exam

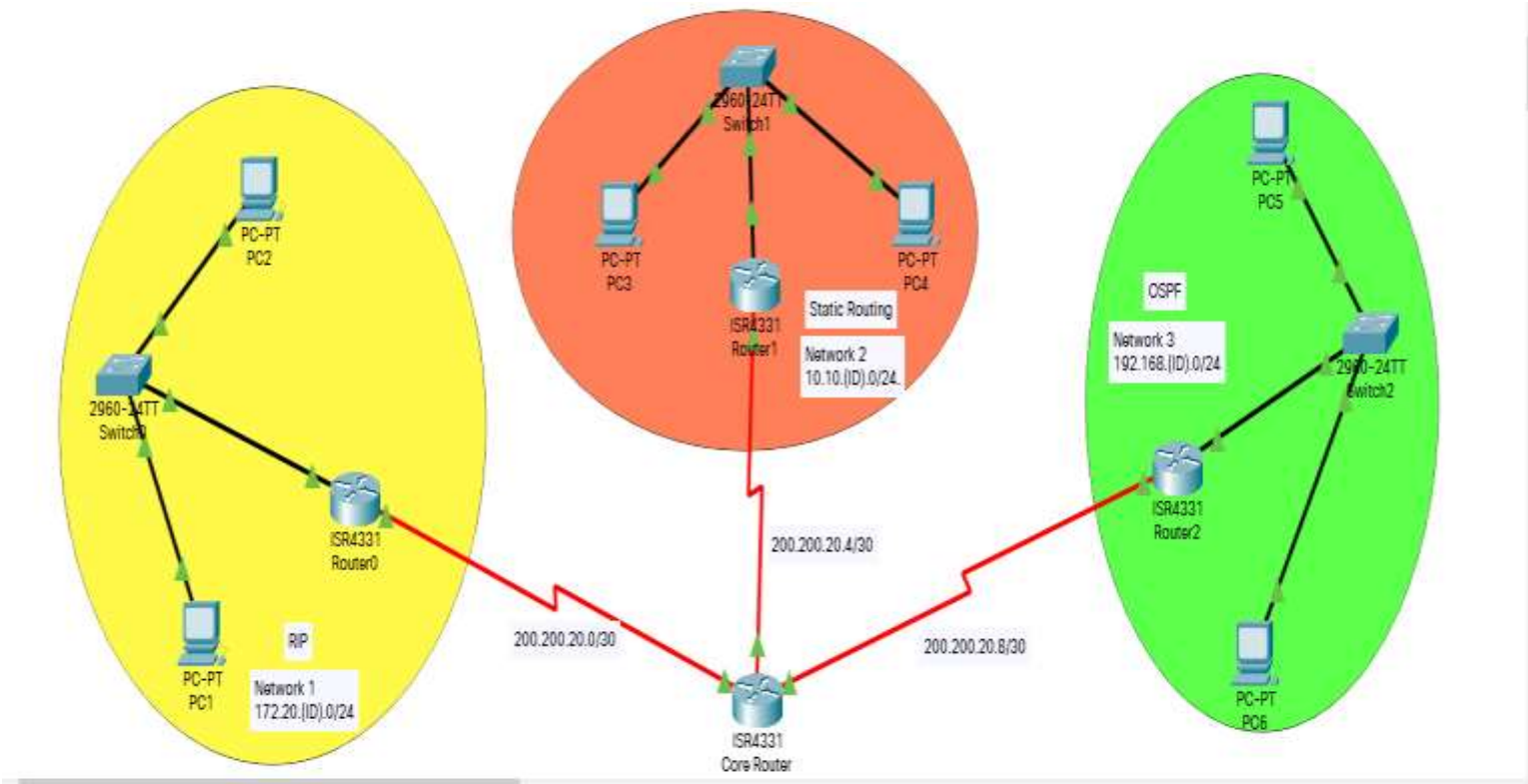

Figure:

Tasks:

1. Connect all the devices exactly as mentioned in the figure with the right network devices.
   a. Consider adding extra modules to the network devices if needed.
   b. The host devices must be connected to each switch through the interfaces ***fastethernet0/(last-two-digits-of-ID mod 24)+1*** and ***fastethernet0/(last-two-digits-of-ID mod 24)+2***. *(Do not use auto connection type to connect the hosts with the switches)*
   c. The core router should connect all the sub networks.
2. Change the hostname of the Router0 of the subnetwork "Network 1" to **"R0_(*last-three-digits-of-ID*)".**
3. Change the hostname of the Router1 of the subnetwork "Network 2" to **"R1_(*last-three-digits-of-ID*)".**
4. Change the hostname of the Router2 of the subnetwork "Network 3" to **"R2_(*last-three-digits-of-ID*)".**
5. Change the hostname of the Core Router to **"CR_(*last-three-digits-of-ID*)".**

6. Configure the IP addresses of the hosts and the router interfaces.
    a. You can choose any host IP addresses from the mentioned network in the figure to assign IP address to the host of a particular subnetwork.
        i. Use the network 172.20.(*last-two-digits-of-ID*).0/24 for "Network 1".
        ii. Use the network 10.10.(*last-two-digits-of-ID*).0/24 for "Network 2".
        iii. Use the network 192.168.(*last-two-digits-of-ID*).0/24 for "Network 3".
    b. The core router connects the other routers with the mentioned networks in the figure.
        i. Network 200.200.20.0/30 connects Core Router with Router0.
        ii. Network 200.200.20.4/30 connects Core Router with Router1.
        iii. Network 200.200.20.8/30 connects Core Router with Router2.
7. Configure RIP routing in the sub-network "Network 1".
8. Configure Next Hop static routing in the sub-network "Network 2" for all other subnetworks ("Network1" and "Network3").
9. Configure OSPF routing in the sub-network "Network 3" (*use **"1"** as the OSPF process ID*).
    a. No need to configure Router ID.
    b. No need to configure OSPF cost.
    c. No need to configure additional OSPF features.
10. Connect the Core Router to the Router0 of subnetwork "Network 1" with RIP Routing.
11. Connect the Core Router to the Router1 of subnetwork "Network 2" with Next Hop Static Routing.
12. Connect the Core Router to the Router2 of subnetwork "Network 3" with OSPF Routing.
13. In the Core Router redistribute all the routing protocols.
    (The core router is running three (3) different routing protocols for the connected subnetworks. Route redistribution is a necessity in this network design to communicate among the subnetworks. Route redistribution allows routes from one routing protocol to be advertised in another routing protocol.)

    a. Redistribute RIP and Static into OSPF

```
Router(config)#router ospf 1
Router(config-router)#redistribute rip metric 200 subnets
Router(config-router)#redistribute static metric 200 subnets
```

    b. Redistribute OSPF and Static into RIP

```
Router(config)#router rip
Router(config-router)#redistribute ospf 1 metric 10 match internal
external 1 external 2
Router(config-router)#redistribute static metric 10
```

14. Check the connectivity from one host to another host in other subnetworks using the "ping" command.
15. Answer the questions of the ***"Template-Mid-Exam-Lab-Report-CSE-4512.docx"*** file.
16. Take the screenshot of the routing tables of all the routers and attach those to the file ***"Template-Mid-Exam-Lab-Report-CSE-4512.docx".***
17. Submit the .pkt or .pka file of your completed task and ***"Template-Mid-Exam-Lab-Report-CSE-4512.docx"*** with the answers and screenshots.