**Lab -3 Assignment**

**Questions**

1. **What is the administrative distance of a static route?**
2. On Cisco routers, static routes have an administrative distance of 1, making them preferred over routes issued by a dynamic routing protocol. The administrative distance is a value that is always only referenced by the local router itself. The administrative distance is not advertised on the network.
3. **Why is it important to configure a default route on router?**
4. Without a default route, a router will drop a request for a network that isn't in its routing table and send ICMP Destination Unreachable to the source of the traffic.
5. **Is there a benefit to configure a directly connected static route instead of a recursive static route?**
6. The benefit to configuring a directly connected static route instead of a recursive static route is that it will allow the routing table to resolve the exit interface in a single search.
7. **In Activity 1, a new network 192.168.3.0/24 is connected to interface G0/0 on R1. What command could be used to configure static route to that network (192.168.3.0/24) from R3?**
8. R1(config)# Ip route 192.168.3.0 255.255.255.0 s0/0/0
9. **Can you think of a situation where you would need to configure both IPv6 and IPv4 static and default routes on a router?**
10. Network administrators may decide to implement both IPv4 and IPv6 networks and would need to configure both IPv6 and IPv4 routing.
11. **In practice, configuring an IPv6 static and default route is very similar to configuring an IPv4 static and default route. Aside from the obvious differences between IPv6 and IPv4 addressing, what are some other differences when configuring and verifying an IPv6 static route as compared to an IPv4 static route?**
12. When configuring a static IPv6 route, the IPv6 route command is used instead of the ip route command. Another important difference is the need to use the show IPv6 route command to view the IPv6 routing table as compared to the IPv4 routing table with the show ip route command
13. **In Activity 03, part 2, you were asked to locate the problem and provide a solution as a part of the activity. What were the two problems and solutions that you determined to exist?**
14. The first problem is, the static routes on R2 are both using the incorrect next-hop address and the solution is to remove the static routes and replace them with the correct next-hop router address.
15. The second problem is, there is no route listed in R3 for the R1 LAN and the solution is to add a static route on R3 to the R1 LAN.

**Conclusion**