Implementing Secure Network Designs and Secure Switching and Routing

Questions 1. Explain the concept of network segmentation in the context of implementing a secure network design. What are the advantages of dividing a network into segments or zones, and how does this enhance security?

Answer: **A zone is an area of the network where the security configuration is the same for all hosts within it. Zones should be segregated from one another by physical and or logical segmentation using VLANs and subnets. Traffic between zones should be strictly controlled using a security device, typically a firewall. The advantage of having many zones in a network allows for multiple points of failure in your network. Where one may be compromised, you could use the segregation as a point of isolation to mitigate attacks or issues your network may have.**

Question 2. Discuss the importance of access control lists in secure switching and routing. How do ACLs help in controlling traffic flow and enforcing security policies within a network?

Answer: **Access control lists filter traffic through the router or the switch, and they allow packets in or deny them. They help to control traffic flow by restricting unauthorized users from accessing sensitive information. It's like trying to get into the club but your name isn't on the list. If they let everyone in without regard to capacity, people wouldn't be able to move. So is true for the network, if they let everything in, the resources would be capped, and latency would be reduced to a complete halt.**