Module 9 CCNA –IP chirag Panchal

• Beginner Question

1. **Explain Perimeter, Firewall, and Internal Routers**

**ANS** - **Perimeter: The outer boundary of a network, acting as a security barrier bet ween the internal network and external threats**

**\*Firewall: A security system that controls and filters network traffic based on predetermined rules to protect against unauthorized access and potential threats**

**\*Internal Routers: Network devices that manage data flow within a network, directing traffic between different subnets to optimize communication**

1. **Explain types of Access List**

**ANS Extended Access Lists: Filter traffic based on source and destination IP addresses, protocols, and ports**

1. **Explain Basic Concept of DHCP**

**ANS** -**Dynamic Host Configuration Protocol (DHCP): Automatically assigns IP addresses and network configuration information to devices on a network**

1. **Explain DHCP DORA Process**

**ANS** -**DHCP DORA Process: Discovery, Offer, Request, and Acknowledgment - the four steps involved in dynamically assigning IP addresses to devices on a network**

1. **Explain the basic operation of NAT**

**ANS** -**Network Address Translation (NAT): Modifies network address information in packet headers to allow multiple devices on a local network to share a single public IP address for internet access**

1. **Explain disadvantages of using NAT**

**ANS** -**Disadvantages of NAT: Complicates end-to-end communication, hinders certain applications, and may pose challenges for peer-to-peer networking due to address translation**

• Intermediate Question

1. **How to solved Mitigating Security Issues with ACLs**

**ANS** -**Mitigating security issues with ACLs: Regularly review and update Access Control Lists to restrict unnecessary access, prevent unauthorized traffic, and enhance network security**

1. **Explain Switch Port Security**

**ANS** -**Switch Port Security: Restricts and controls access to network devices by defining and enforcing policies on the number and types of devices allowed to connect to switch ports**

1. **Explain ACL with command**

**ANS Creating an ACL in Cisco routers: Example command - "access-list 1 permit 192.168.1.0 0.0.0.255," permitting traffic from the specified IP range**

1. **Explain DHCP Snooping and ARP Inspection**

**ANS DHCP Snooping: Prevents unauthorized DHCP servers by monitoring and filtering DHCP messages**

**ARP Inspection: Mitigates ARP spoofing attacks by validating ARP packets against DHCP snooping bindings**

1. **Explain DHCP Relay Agene**

**ANS** -**DHCP Relay Agent: Forwards DHCP requests from clients in one subnet to a DHCP server in another, facilitating dynamic IP address assignment across different network segments**

1. **Types of Network Address Translation**

**ANS** -**Network Address Translation (NAT) Types: Static NAT assigns a fixed public IP to a private address and PAT (Port Address Translation) maps multiple private IPs to a single public IP using unique port numbers**

1. **Configuring Dynamic NAT**

**ANS** -**Configuring Dynamic NAT: Example command - "ip nat inside source list ACL pool POOL\_NAME" to dynamically map private IP addresses to available public IP addresses from a pool**

• Advance question

1. **Write basic command of Standard Access Lists**

**ANS** -**Basic command for Standard Access Listsaccess-list access-list-number {permit | deny} {source}**

1. **Explain Telnet/SSH**

**ANS** -**Telnet is a network protocol that enables text-based communication between devices over a network including login credentials, in plaintext / SSH (Secure Shell) is a secure network protocol that allows encrypted communication and secure access to remote devices, ensuring confidentiality and integrity of data during transmission**

1. **Explain How to Configure DHCP**

**ANS To configure DHCP, set up the DHCP server by specifying IP address ranges, lease durations, and network settings to dynamically assign IP addresses to devices on the network**

1. **NAT Explain with Command**

**ANS-Enable NAT on a router with the command "ip nat inside source list [ACL] interface [interface] overload" to dynamically translate private IP addresses to a single public IP address for outbound traffic e**