Module 9 CCNA - Infrastructure Services

# Beginner Question

### 1. Explain Parameter, Firewall, and Internal Routers

Parameters are settings used to define the characteristics or behavior of a system or process. In networking, parameters can include configurations such as IP addresses, subnet masks, and gateway addresses. A Firewall is a network security device that monitors and controls incoming and outgoing network traffic based on predetermined security rules. It acts as a barrier between a trusted internal network and untrusted external networks, such as the internet. Internal routers are routers that operate within an organization's internal network to route traffic.

### 2. Explain types of Access Lists

Standard ACL : when a PC needs to be blocked for whole different network standard ACL can be used.

Extended ACL: when particular services needs to be blocked or when 1-1 PC needs to be blocked extension ACL.

### 3. Explain Basic Concept of DHCP

Dynamic Host configuration protocol is used to assign ip addresses and other network configuration over the network when devices are detected on the network.

### 4. Explain DHCP DORA Process

DHCP DORA (Discover, Offer, Request, Acknowledge) is the process through which a client obtains an IP address from a DHCP server. The client sends a DHCP Discover message to discover available DHCP servers, receives DHCP Offer messages from servers, selects one, and sends a DHCP Request message to request the offered IP address. Finally, the server sends a DHCP Acknowledge message to confirm the IP address assignment.

### 5. Explain the basic operation of NAT

Network address translation. It is a technique to modify network address while transferring data from public ip to private ip and vice versa.

### 6. Explain disadvantages of using NAT

Disadvantages of using NAT is limited connectivity due to which it can cause delays. It hides end to end IP addresses making it untraceable and makes many applications non compatible.

### 7. Explain the basic operation of PAT

Port address translation. It uses different ports but the same IP so it can be used on many devices. It also makes it cost effective.

### 8. Explain Syslog

Syslog is a standard protocol used to send log messages and event notifications from network devices to a centralized syslog server for monitoring, analysis, and troubleshooting

# Intermediate Question

### 1. Explain Switch Port Security

Switch Port Security is enabling one or more ports and configuring security features on the switch to make it secure and workable for only specific devices. When other unauthorized devices are detected that are trying to connect to the network through that port, it will trigger blocking that port. This can be used by technicians to know if the port has been tampered with.

### 2. Explain DHCP Snooping and ARP Inspection

DHCP snooping and ARP inspection are security features used to prevent attacks such as DHCP spoofing and ARP spoofing by monitoring and validating DHCP and ARP messages on a network.

### 3. Explain DHCP Relay Agent

It is a network device that forwards DHCP messages between DHCP clients and DHCP servers across different network segments or subnets.

### 4. Types of Network Address Translation

There are 3 types of Network Address Translation: Static NAT, Dynamic NAT and Port Address Translation (PAT)

### 5. Configuring Dynamic NAT - Done in Lab

### 6. Configuring PAT - Done in Lab

# Advance question

### 1. Explain Telnet/SSH

Telnet and SSH are network protocols used to get remote access. Telnet is less secure compared to SSH. It is used to configure, troubleshoot and manage network devices. On the other hand SSH is used to get remote access to other devices using the command line.

### 2. Explain How to Configure DHCP

DHCP is configured on a DHCP server by defining a range of IP addresses to be leased to clients, specifying lease duration, and configuring other network parameters such as DNS servers and default gateways.

### 3. NAT Explain with Command

Ip nat inside/outside is used on interfaces to specify translation rules for those interface.

### 4. Explain with Command

### 5. Explain and configure vtp protocol

### 6.Explain with Command