Module 8:- Module 8: Network Access , Basic routing and Advance routing concept, switch concept.

1. Explain Switch

Answer:-

A switch is a network device that connects multiple devices in a LAN (Local Area Network) and forwards data based on MAC addresses. It operates at Layer 2 (Data Link Layer) of the OSI model. Unlike hubs, switches send data only to the intended recipient, reducing network congestion and improving performance.

2. Explain Switch Boot Sequence

Answer:-

The boot sequence of a Cisco switch follows these steps:

1. Power-On Self Test (POST): Checks hardware components.

2. Load Bootloader: The bootloader initializes the hardware.

3. Locate and Load IOS: The switch looks for the operating system (IOS) in Flash memory and loads it.

4. Execute Startup Configuration: It applies saved settings from NVRAM. If no configuration is found, it enters setup mode.

3. Explain Three Methods to Access Switch Command Line Interface (CLI)

Answer:-

1. Console Port: Connects a computer to the switch using a console cable for direct access.

2. SSH (Secure Shell): A secure remote access method using encryption for secure communication.

4. Explain and Configuring the Cisco Internet Operating System (IOS)

Answer:-

Cisco IOS is the software that runs on Cisco network devices. To configure a switch:

1. Connect to the switch via console, SSH, or Telnet.

2. Enter privileged EXEC mode using enable.

3. Enter global configuration mode using configure terminal.

4. Apply configurations (e.g., setting up VLANs, IP addresses, passwords).

5. Save the configuration using write memory or copy running-config startup-config.

5. Explain Switch Port

Answer:-

A switch port is a physical interface on a switch where devices connect. Ports can be configured as:

Access Port: Connects to end devices and carries traffic for a single VLAN.

Trunk Port: Carries traffic for multiple VLANs between switches.

6. If all four routers (R1, R2, R3, R4) are in the same VLAN and can ping each other, they must be using OSPF (Open Shortest Path First) as a routing protocol. OSPF requires matching network settings like area ID, subnet, and authentication. Based on this, the two routers that can form a neighbor relationship are:

Answer: (A. R1) ( C. R3)

7. enable secret [password] is hashed using which algorithm?

Answer:A. MD5

8. show ip ospf neighbor shows FULL/BDR. What does BDR mean?

Answer:- B. R1 is a backup designated router.

9. Which command is used to view the neighbor discovery table on a PC?

Answer:-C. netsh interface ipv6 show neighbor

10. What type of variable is Routers = [R1, R2, R3]?

Answer:

Answer:-A. List

11. Identify the fields in an IPv4 header. (Choose three)

Answer B. Time to Live (TTL) – Prevents packets from looping indefinitely.

C. Source Address – Identifies the sender's IP.

D. Destination Address – Identifies the recipient's IP.