Module -5: Network Fundamentals and Building Networks

Section 1: Multiple Choice

1. What is the primary function of a router in a computer network?

Answer: c) Forwarding data packets between networks

As a new student, I learned that routers help send data between different networks.

2. What is the purpose of DHCP in a computer network?

Answer: d) Dynamically assigning IP addresses to devices

I found out that DHCP automatically gives IP addresses to devices in the network.

3. Which network device operates at Layer 2 and forwards data based on MAC addresses?

Answer: b) Switch

Switches work with MAC addresses and help send data to the correct device.

4. Which network topology connects all devices in a linear fashion?

Answer: b) Bus

The bus topology connects all computers in a straight line using one main cable.

Section 2: True or False

A VLAN allows network administrators to logically segment a single physical network into multiple virtual networks.

Answer: True

I learned VLANs help separate traffic in a network without extra hardware.

TCP is a connectionless protocol that provides reliable, ordered delivery of data packets.

Module -5: Network Fundamentals and Building Networks

Answer: False

Actually, TCP is a connection-based protocol, not connectionless.

A firewall monitors and controls incoming and outgoing network traffic based on security rules.

Answer: True

I understood that firewalls protect the network by filtering traffic.

Section 3: Short Answer

8. Steps to set up a wireless network for a SOHO environment:

- Choose a good internet plan.
- Buy a wireless router.
- Connect the router to the modem.
- Power on the router and devices.
- Go to the router settings using a browser.
- Set up the Wi-Fi name and password.
- Make sure DHCP is on.
- Connect devices to the Wi-Fi.
- Secure the network with passwords and firewall.
- Test internet access.

As a new student, I followed these steps to understand how internet is shared at home or in an office.

Section 4: Practical

9. How to configure a router for internet access using DHCP:

- Connect router to the modem with a cable.

- Open a browser and enter router IP (like 192.168.1.1).
- Log in with default username and password.
- In the settings, choose Dynamic IP or DHCP.
- Save the settings.
- Make sure DHCP server is enabled in LAN settings.
- Reboot the router.
- Check the internet connection.

I found this practical and helpful to get the internet working on a new router.

Section 5: Essay

10. Importance of Network Documentation:

As a beginner, I realized network documentation is very important. It helps us know what devices are connected, IP addresses used, and the network layout. If there's a problem, good documentation makes fixing it easier. It also helps new team members understand the setup. In the future, if we want to add new devices or upgrade the network, documentation helps in planning. So, I think it's like a guidebook for building, fixing, and growing a network.