# Assignment: module -5 Network Fundamentals and Building Networks

## Section 1: Multiple Choice

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

ANS : Forwarding data packets between networks

2. What is the purpose of DHCP (Dynamic Host Configuration Protocol) in a computer network?

ANS : Dynamically assigning IP addresses to devices

3. Which network device operates at Layer 2 (Data Link Layer) of the OSI model and forwards data packets based on MAC addresses?

ANS : Switch

4. Which network topology connects all devices in a linear fashion, with each device connected to a central cable or backbone?

ANS : Bus

## Section 2: True or False

5. A VLAN (Virtual Local Area Network) allows network administrators to logically segment a single physical network into multiple virtual networks, each with its own broadcast domain.

ANS : True

6. TCP (Transmission Control Protocol) is a connectionless protocol that provides reliable, ordered, and error-checked delivery of data packets over a network.

ANS : False

7. A firewall is a hardware or software-based security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.

ANS : True

## Section 3 :

8. Describe the steps involved in setting up a wireless network for a small office or home office (SOHO) environment.

ANS :  **Steps for SOHO Wireless Network**

1. Get a router and modem.
2. Connect and power them on.
3. Log in to the router and configure Wi-Fi (SSID, WPA3/WPA2, password).
4. Enable firewall and security settings.
5. Test connectivity.
6. Place router centrally and update firmware.

## Section 4: Practical

9. Demonstrate how to configure a router for Internet access using DHCP (Dynamic Host Configuration Protocol).

ANS : **Steps to Configure a Router for Internet Access Using DHCP**

1. **Connect Router**: Connect the router to the modem and power it on.
2. **Access Router Settings**: Enter the router’s IP address (e.g., 192.168.1.1) in a browser and log in.
3. **Enable DHCP**: Navigate to the network settings and ensure DHCP is enabled.
4. **Set WAN Connection Type**: Choose "DHCP" or "Dynamic IP" as the WAN connection type.
5. **Save and Apply**: Save the settings and let the router restart.
6. **Test Connection**: Connect a device to the network and check internet access.

## Section 5:

10. Discuss the importance of network documentation in the context of building and managing networks.

ANS : **Importance of Network Documentation**

1. **Simplifies Troubleshooting**: Speeds up issue resolution.
2. **Enhances Security**: Tracks configurations to prevent vulnerabilities.
3. **Supports Planning**: Eases upgrades and expansions.
4. **Ensures Continuity**: Helps new team members manage the network.
5. **Reduces Downtime**: Enables quick repairs and minimizes disruptions.
6. **Meets Compliance**: Keeps records for regulatory audits.

**Examples to Document**: Topology diagrams, IP addresses, device settings, and change logs.