Assignment Module 3: Understanding and Maintenance of Networks

Section 1: Multiple Choice

1. **What is the primary function of a router in a computer network?**
   c) Forwarding data packets between networks

2. **What is the purpose of DNS (Domain Name System) in a computer network?**
   c) Converting domain names to IP addresses

3. **What type of network topology uses a centralized hub or switch to connect all devices?**
   a) Star

4. **Which network protocol is commonly used for securely accessing and transferring files over a network?**
   b) FTP

Section 2: True or False

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

6. **DHCP (Dynamic Host Configuration Protocol) assigns static IP addresses to network devices automatically.**
   False

7. **VLANs (Virtual Local Area Networks) enable network segmentation by dividing a single physical network into multiple logical networks.**
   True

Section 3: Short Answer

8. **Explain the difference between a hub and a switch in a computer network.**
   A hub sends data to all devices connected to it, which can cause traffic and slowdowns.

A switch sends data only to the device it's meant for, making the network faster and more secure.

9. **Describe the process of troubleshooting network connectivity issues.**

    o Check if cables are connected or Wi-Fi is on

    o Restart the router or device

    o Check IP settings

    o Use the ping command to test connection

    o Update drivers or call the internet provider if needed

Section 4: Practical Application

10. **Demonstrate how to configure a wireless router's security settings to enhance network security.**

- Login to the router (type IP like 192.168.1.1 in a browser)

- Change the default admin username/password

- Set a strong Wi-Fi password using WPA3 or WPA2

- Turn off WPS (Wi-Fi Protected Setup)

- Hide the network name (SSID), if needed

- Enable a firewall, if available

Section 5: Essay

11. **Discuss the importance of network documentation and provide examples of information that should be documented.**
    Network documentation helps in managing, fixing, and upgrading the network. It saves time during problems and helps new technicians understand the setup.
    Examples to document:

- IP addresses and device names

- Network diagrams

- Login credentials (stored securely)

- Software versions

- Backup schedules

- Change history and updates