Assignment: Understanding and Maintenance of Networks

Section 1: Multiple Choice

1. What is the primary function of a router in a computer network?
   a) Assigning IP addresses to devices
   b) Providing wireless connectivity to devices
   c) Forwarding data packets between networks
   d) Managing user authentication and access control

   - Forwarding data packets between networks.

2. What is the purpose of DNS (Domain Name System) in a computer network?
   a) Encrypting data transmissions for security
   b) Assigning IP addresses to devices dynamically
   c) Converting domain names to IP addresses
   d)Routing data packets between network segments

   - Converting domain names to IP addresses.

3. What type of network topology uses a centralized hub or switch to connect all devices?
   a) Star
   b) Bus
   c) Ring
   d) Mesh

   - Star.

4. Which network protocol is commonly used for securely accessing and transferring files over a network?
   a) HTTP
   b) FTP
   c) SMTP
   d) POP3

   - FTP.

Section 2: True or False

5. True or False: 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. True or False: DHCP (Dynamic Host Configuration Protocol) assigns static IP addresses to network devices automatically.
   - False.
7. True or False: 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 broadcasts data to all devices, while a switch sends data only to the intended device.
9. Describe the process of troubleshooting network connectivity issues.

   - Troubleshooting network connectivity issues involves checking physical connections, verifying IP configurations, testing hardware (e.g., cables, routers), pinging devices to test communication, examining firewall settings, and reviewing network settings like DNS and DHCP.

Section 4: Practical Application

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

    - Done.

Section 5: Essay

11. Discuss the importance of network documentation and provide examples of information that should be documented.

- Network documentation is crucial for troubleshooting, maintenance, and future upgrades. It ensures consistency, aids in identifying issues quickly, and helps with planning and security.

- Examples of information to document include:
- Network topology (diagram of devices and connections).
- IP address schemes.
- Device configurations (routers, switches, firewalls).
- Password policies and credentials.
- Firmware versions of networking devices.
- Network performance metrics.