

Assignment module 3: Understanding and Maintenance of

Section 1: Multiple Choice

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

Ans: - c) Forwarding data packets between networks

2. What is the purpose of DNS (Domain Name System) in a computer network?

Ans: - c) Converting domain names to IP addresses

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

Ans: - a) Star

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

Ans: - b) 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.

Ans: - True

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

Ans: - False

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

Ans: - True

Section 3: Short Answer

8. Explain the difference between a hub and a switch in a computer network.

Ans: -

Hub: -

- A hub is a basic networking device that connects multiple computers in a network.
- When it receives data, it broadcasts that data to all connected devices, regardless of the destination.
- Operates at OSI Layer 1 (

Switch: -

- A switch is a more advanced device that connects devices in a network like a hub, but more intelligently.
- It sends data only to the specific device (port) it's intended for by using MAC addresses.
- Operates at OSI Layer 2

9. Describe the process of troubleshooting network connectivity issues.

Ans: -

Troubleshooting network connectivity involves a systematic process:

- first, identify the problem and gather information.
- second, isolate the issue by checking physical connections and device status.
- third, test potential causes using tools like Ping and Traceroute.
- fourth, implement a solution, verify functionality, and document the process.

Section 4: Practical Application [Done]

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

Ans: -

Section 5: Essay

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

Ans: -

Network documentation is crucial for understanding, troubleshooting, and managing a network infrastructure. It provides a roadmap for network changes, facilitates faster troubleshooting, and ensures compliance with regulations. Examples of information that should be documented include network topology diagrams, server details, software configurations, backup schedules, and security protocols.

Importance of Network Documentation:

1. **Troubleshooting** – Helps quickly identify problems by showing device roles and connections.
2. **Maintenance** – Simplifies updates, upgrades, and replacements of hardware/software.
3. **Security** – Documents help enforce security policies and detect unauthorized changes.
4. **Training & Handover** – Assists new administrators in understanding the network.

Examples of Information to Document:

- **Network Topology Diagrams** – Visual maps of network layout, including switches, routers, servers, and connections.
- **IP Addressing Scheme** – Assigned IPs, subnetting, and DHCP/static assignments.
- **Device Inventory** – List of all hardware (model, serial numbers, roles, location).
- **Configuration Files** – Backups of switch, router, and firewall configurations.
- **Login Credentials** – Securely stored admin credentials for devices and systems.