Assignment Module 3: Understanding and Maintenance of Network

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Section 1: Multiple Choice

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

\*Answer: c) Forwarding data packets between networks

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

\*Answer: c) Converting domain names to IP addresses

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

\*Answer: a) Star

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

\*Answer: b) FTP

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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.

Answer: True

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

\*Answer: False

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

\*Answer: True

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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 in the network, regardless of the intended recipient, which can cause collisions. A \*switch\*, on the other hand, is smarter and sends data only to the specific device it is intended for, improving efficiency and reducing collisions.

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

First, check physical connections (cables, router, switch). Then verify IP configurations and ping devices to test reachability. Use tools like ipconfig, ping, Tracert , and netstat. If needed, restart networking devices and check firewall or security software that may be blocking traffic.

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Section 4: Practical Application

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

- Log in to the router's admin interface via browser (192.168.1.1 or 192.168.0.1)

- Change default admin username and password

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

- Disable WPS and remote management

- Enable firewall and MAC address filtering

- Update router firmware for latest security patches

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Section 5: Essay

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

Network documentation is crucial for maintaining, troubleshooting, and scaling a network. It helps new IT staff understand the setup and saves time during upgrades or repairs. Important documentation includes:

- IP address schema

- Device configurations and locations

- Network topology diagrams

- Security policies

- Change logs and maintenance records