

Assignment module 6: Network Security, Maintenance, and Troubleshooting Procedures

Section 1: Multiple Choice

1. What is the primary purpose of a firewall in a network security infrastructure?

- a) Encrypting network traffic
- b) Filtering and controlling network traffic
- c) Assigning IP addresses to devices
- d) Authenticating users for network access

Ans:- b) Filtering and controlling network traffic

2. What type of attack involves flooding a network with excessive traffic to disrupt normal operation?

- a) Denial of Service (DoS)
- b) Phishing
- c) Spoofing
- d) Man-in-the-Middle (MitM)

Ans:- a) Denial of Service (DoS)

3. Which encryption protocol is commonly used to secure wireless network communications?

- a) WEP (Wired Equivalent Privacy)
- b) WPA (Wi-Fi Protected Access)
- c) SSL/TLS (Secure Sockets Layer/Transport Layer Security)
- d) AES (Advanced Encryption Standard)

Ans:- b) WPA (Wi-Fi Protected Access)

4. What is the purpose of a VPN (Virtual Private Network) in a network security context?

Ans:- To securely connect to a private network over a public network

Section 2: True or false

5) True or False: Patch management is the process of regularly updating software and firmware to address security vulnerabilities and improve system performance.

Ans:- True

6) True or False: A network administrator should perform regular backups of critical data to prevent data loss in the event of hardware failures, disasters, or security breaches.

Ans:- True

7) True or False: Traceroute is a network diagnostic tool used to identify the route and measure the latency of data packets between a source and destination device.

Ans:- True

Section 3: Short Answer

8. Describe the steps involved in conducting a network vulnerability Assignment.

Ans:-

Steps Involved in Conducting a Network Vulnerability Assessment

A **network vulnerability assessment** is a proactive process to identify, evaluate, and address security weaknesses in a network. Below are the key steps involved:

- 1. Define the Scope and Objectives**
- 2. Gather Network Information**
- 3. Choose and Configure Tools**
- 4. Perform Scanning and Enumeration**
- 5. Analyze the Results**

6. Validate Findings
7. Report and Document
8. Remediate and Mitigate
9. Re-Scan and Verify
10. Maintain and Monitor

Section 4: Practical Application

9. Demonstrate how to troubleshoot network connectivity issues using the ping command.

Ans:-

How to Troubleshoot Network Connectivity Issues Using the ping Command

The ping command is a simple yet powerful network diagnostic tool used to test the **connectivity between your computer and another device** (like a server, router, or website).

Steps to Troubleshoot Using ping

1. Open the Command Prompt or Terminal
2. Ping the Localhost
3. Ping Your Local Gateway
4. Ping an External IP
5. Ping a Domain Name

Section 5: Essay

10. Discuss the importance of regular network maintenance and the key tasks involved in maintaining network infrastructure.

Ans:-

Importance of Regular Network Maintenance and Key Tasks

Regular **network maintenance** is essential to ensure that the network runs **smoothly, securely, and efficiently**. It helps prevent unexpected downtime, enhances performance, and protects against security threats.

***Why Regular Network Maintenance is Important**

- 1)Improves Security**
- 2)Ensures System Reliability and Uptime**
- 3)Enhances Performance**
- 4)Supports Data Integrity and Backup**
- 5)Aids in Planning and Scalability**

***Key Tasks in Network Maintenance**

- 1.Update Firmware/Software**
- 2. Monitor Network Traffic**
- 3. Backup Configurations and Data**
- 4. Check Physical Connections**
- 5. Test Redundancy Systems**
- 6. Review Access Controls**
- 7. Clean and Organize Hardware**
- 8. Analyze Logs**
- 9. Document Changes**

