**MAHEE SHAH**

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| **Assignment module 6: Network Security, Maintenance, and Troubleshooting Procedures** | |  |
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| **Section 1: Multiple Choice** |  |

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| 1. What is the primary purpose of a firewall in a network security infrastructure? | |
|  | 1. Encrypting network traffic 2. Filtering and controlling network traffic 3. Assigning IP addresses to devices 4. Authenticating users for network access   **ANS- (b) as it helps to regulate ingoing and outgoing traffic** |
| 2. What type of attack involves flooding a network with excessive traffic to disrupt normal operation? | |
|  | 1. Denial of Service (DoS) 2. Phishing 3. Spoofing 4. Man-in-the-Middle (MitM)   **ANS- (a) Denial of service** |
| 3. Which encryption protocol is commonly used to secure wireless network communications? | |
|  | 1. WEP (Wired Equivalent Privacy) 2. WPA (Wi-Fi Protected Access) 3. SSL/TLS (Secure Sockets Layer/Transport Layer Security) 4. AES (Advanced Encryption Standard)   **ANS- (b) WPA, as it has stronger encryption** |
| 4. What is the purpose of a VPN (Virtual Private Network) in a network security context?  **ANS- VPN helps to protect to protect data by hiding users IP address. It builds a direct connection b/w user’s device and remote server to make secure access to internal network resources.** | |



**Section 2: Tr**

**ue or false**

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

**TRUE.**

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.

**TRUE**

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. **TRUE.**



**Section 3: Short**

**Answer**

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

**ANS- Network mapping from tools to track devices, IP addresses, and network topology. Identifying vulnerability includes scanning tools to identify security threats.**



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. Demonstrate how to trr

ubleshoot network connectivity issues using the

ping command.



**Section 4: Practical**

**Application**

**ANS-First we open cmd and then type the following commands**

* **Type ping 127.0.0.0 and press enter to check if NIC is working properly or not. As 127.0.0.0. is loopback IP to check localhost network connectivity.**
* **Type ping (gateway ip) to check if it can communicate through router or not**
* **Type ping external ip lyk 8.8.8.8(chrome)to check if device can reach internet or not**
* **Type ping** [**www.google.com**](http://www.google.com) **or any other domain name to check if DNS is working or not.**

**Session 5:**

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

**Regular network maintenance is imp bcoz:**

* **To avoid major cost repairs or replacements**
* **For smooth functioning for users**
* **Regular hardware and software updates for better functioning**

1. Which of the following best describes the purpose of a VPN (Virtual Private Network)?

1. Encrypting network traffic to prevent eavesdropping
2. Connecting multiple LANs (Local Area Networks) over a wide area network (WAN)
3. Authenticating users and controlling access to network resources
4. Reducing latency and improving network performance

**ANS- (a), although VPN can facilitate connecting multiple LANs ,its primary purpose is more of encryption of traffic.**