**Assignment: Understanding and Maintenance of Networks**

**Module 3: Section 1: multiple choice.**

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

 Ans: c) forwarding data packets between networks.

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

 c) Converting domain names to IP addresses.

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

Ans: star

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

Ans: 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) assign sstatic IP addresses to network devices automatically.**

Ans: true.

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

Ans: false.

**Section 3: Short Answer**

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

**Ans:**A hub broadcasts all incoming data to every connected device, while a switch intelligently directs data only to the specific device it's intended for, using [MAC addresses](https://www.google.com/search?q=MAC+addresses&rlz=1C1CFYW_en-GBIN1183IN1183&oq=Explain+the+difference+between+a+hub+and+a+switch+in+a+computer+network.&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIGCAEQABge0gEJMTk3OWowajE1qAIAsAIA&sourceid=chrome&ie=UTF-8&mstk=AUtExfDH6oxRfqu9I2qQq2DpA2Yy2dxuAK9A4RZ3dTBymQqAUBENRHuxKRTjSovJXPrZvn9cnrLcEr9FpPOTuGa_rLFvYkNk-0NipM6gHht_8HUZSQSWdQggtkI9ny-1r2vZsYpORuonyLFAnzAYtfd3VT6qQnAUvLY4tg2GMF9oVJqxgBu_EtvoeAm9vZA7hrG68dnBVdCd4CDGmm_J_MR0KKBB-nhN3LFctbA9fmLxgFBHgwxg1rjpBDbsa8SSQOvq5DGCKBZyoWzDI3rlLrsnj5WI&csui=3&ved=2ahUKEwir0anLsreQAxXDR2wGHZ55PAwQgK4QegQIAhAC).

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

Ans: 1. identify the problem, 2. establish a theory of probable cause, 3. test the theory, 4. create a plan of action and implement it, and 5. verify that the issue is resolved and document the process.

**Section 4: Practical Application**

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

Ans:  access the router's admin page through a web browser by entering its IP address, then change the default administrator login credentials, select a strong encryption like WPA3, and change the default SSID (network name) and password.

**Section 5: Essay**

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

Ans : workings, and is crucial for maintaining a healthy and resilient IT environment.