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

c) Forwarding data packets between networks

2. What is the purpose of DHCP (Dynamic Host Configuration Protocol) in a computer network?

d) Dynamically assigning IP addresses to devices

3. Which network device operates at Layer 2 (Data Link Layer) of the OSI model and forwards data packets based on MAC addresses?

b) Switch

4. Which network topology connects all devices in a linear fashion, with each device connected to a central cable or backbone?

b) Bus

5. A VLAN (Virtual Local Area Network) allows network administrators to logically segment a single physical network into multiple virtual networks, each with its own broadcast domain.

true

6.TCP (Transmission Control Protocol) is a connectionless protocol that provides reliable, ordered, and error-checked delivery of data packets over a network.

false

7. A firewall is a hardware or software-based security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.

True

8. Describe the steps involved in setting up a wireless network for a small office or home office (SOHO) environment

To set up a wireless network for a small office or home office , first, choose an appropriate wireless router that supports your required speed and coverage. Then, connect the router to the modem provided by your Internet service provider . Power on the router and access its configuration page through a web browser using the router's IP address. Set up a secure Wi-Fi network by choosing an SSID and enabling WPA2 or WPA3 encryption with a strong password. If needed, configure additional settings like guest networks, DHCP, or static IP addresses. Test the network by connecting devices to the Wi-Fi and check for internet connectivity. Optionally, adjust the router's position for optimal signal strength and coverage. Finally, ensure regular software updates and configure firewall/security settings for added protection.

9. Demonstrate how to configure a router for Internet access using DHCP (Dynamic Host Configuration Protocol).

To configure a router for Internet access using DHCP, first, connect the router to the modem via the WAN or Internet port. Power on the router and access the router's settings through its IP address using a web browser. Log in with the administrator credentials. In the router's settings, navigate to the WAN or Internet settings section and select. DHCP as the

connection type. The router will automatically receive an IP address from the ISP via DHCP. Save the settings and reboot the router if necessary. Then, ensure the router's DHCP server is enabled so that it can assign local IP addresses to devices on the network. Finally, connect devices to the router and verify Internet connectivity.

10. Discuss the importance of network documentation in the context of building and managing networks.

Network documentation is crucial for building and managing networks as it provides a clear map of network topology, configurations, IP address allocations, and device details. It helps network administrators troubleshoot issues efficiently, track network changes, and maintain consistency. Proper documentation ensures that the network can be scaled, updated, or restored without confusion. It also aids in security by keeping track of access points, firewall rules, and user permissions. Additionally, it supports compliance with industry regulations and facilitates easier onboarding of new network personnel.