

# Assignment Module 5: Network Fundamentals and Building Networks

## Section 1: Multiple Choice

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

**Answer: Forwarding data packets between networks.**

2. What is the purpose of DHCP in a computer network?

**Answer: Dynamically assigning IP addresses to devices.**

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

**Answer: Switch.**

4. Which network topology connects all devices in a linear fashion using a single backbone cable?

**Answer: Bus topology.**

## Section 2: True or False

5. A VLAN allows logical segmentation of a physical network into multiple virtual networks.

**Answer: True.**

6. TCP is a connectionless protocol.

**Answer: False. TCP is connection-oriented.**

7. A firewall monitors and controls incoming and outgoing network traffic.

**Answer: True.**

## Section 3: Short Answer

8. Describe the steps involved in setting up a wireless network for a SOHO environment.

- **Choose a reliable wireless router.**
- **Connect the router to the modem.**
- **Access the router setup page.**
- **Configure SSID and a strong Wi-Fi password.**
- **Enable WPA2/WPA3 encryption.**
- **Connect devices and test connectivity.**
- **Update firmware and optionally create a guest network.**

## Section 4: Practical Application

9. Demonstrate how to configure a router for Internet access using DHCP.

- **Connect the router WAN port to the ISP modem.**
- **Log in to the router's web interface.**
- **Select Obtain IP Automatically (DHCP).**
- **Save settings and restart the router.**
- **Connect a device to the LAN port.**
- **Verify IP address assignment and test Internet access.**

## Section 5: Essay

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

Network documentation is very important for building and managing computer networks effectively. It provides detailed information about network structure, devices, and configurations. Proper documentation helps network administrators understand how the network is designed. It simplifies troubleshooting by allowing quick identification of problems. Documentation ensures consistency when configuring devices across the network. It supports future expansion and scalability planning. Accurate records improve network security by tracking devices, IP addresses, and access permissions. Documentation helps new staff understand the network quickly. It reduces downtime during failures or maintenance tasks. Network diagrams show how devices are interconnected. Configuration files and IP maps assist in efficient management. Overall, good network documentation improves reliability, performance, and long-term network stability.