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?

 a) Assigning IP addresses to devices

 b) Providing wireless connectivity to devices

 c) Forwarding data packets between networks

 d) Managing user authentication and access control

Ans:- c) Forwarding data packets between networks

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

 a) Assigning static IP addresses to devices

 b) Resolving domain names to IP addresses

 c) Managing network traffic and congestion

 d) Dynamically assigning IP addresses to devices

Ans:- 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?

 a) Router

 b) Switch

 c) Hub

 d) Repeater

Ans:- b) Switch

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

 a) Star

 b) Bus

 c) Ring

 d) Mesh

Ans:- b) Bus

Section 2: True or False

5)True or False: 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.

Ans:- True

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

Ans:- False

7)True or False: A firewall is a hardware or software-based security system that monitors and controls incoming

Ans:- True

Section 3: Short Answer

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

Ans:-

1. Choose the Right Equipment

2. Connect the Hardware

3. Access Router Settings

4. Configure Wireless Settings

5. Set Up Network Security

6. Configure DHCP

7. Connect Devices

8. Test the Network

9. Optional Advanced Settings

Section 4: Practical

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

Ans:-

Step-by-Step Guide: Configuring a Router Using DHCP

1. Connect the Hardware

2. Access the Router's Admin Page

3. Configure Internet Settings (WAN)

4.Configure LAN Settings (Optional)

5. Set Up Wireless (Wi-Fi)

6. Test Internet Access

Section 5: Essay

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

Ans:-

Importance of Network Documentation in Building and Managing Networks

Network documentation is a **critical practice** in IT infrastructure management. It involves keeping accurate records of the network's configuration, hardware, software, IP addresses, and topology. Here's why it's essential:

1. **Eases Troubleshooting and Maintenance**

2. **Improves Network Security**

3. **Simplifies Network Expansion**

4. **Supports Disaster Recovery**

5. **Enhances Team Collaboration**

6. **Aids in Compliance and Auditing**

7. **Cost and Time Efficiency**

📄 Examples of Network Documentation

- Network diagrams (topology maps)
- IP address allocation tables
- Device inventory (model, location, config)
- VLAN and subnetting schemes
- User access permissions
- Change logs and maintenance records