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**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 because it is a networking device that connects different networks and forward data between IP addresses.

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 , it automatically provides ip address ,subnet mask, default gateaway.

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 ,data travels in a single line.

Section 2: True or False

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.

Ans:-True , a VLAN divides single physical network into multiple virtual network.

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

Ans:-False , it is a connection oriented protocol .It establishes a connection between sender and a receiver.

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.

Ans:-True , it main work is to filter network traffic and monitor it.

Section 3:

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

Ans:-

1. Gather Required Equipment
2. Connect the Hardware
3. Access the Router’s Configuration Page
4. Configure Internet Settings
5. Set Up Wireless Network (Wi-Fi)
6. Configure Additional Security Settings
7. Connect Devices
8. Test the Network
9. Maintain the Network

Section 4: Practical

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

Ans:-

1)Connect the router.

2) Access the Router’s Configuration Page

3) Configure the WAN/Internet Connection

4) Configure the LAN & DHCP Server (for local devices)

5) Save & Reboot

Section 5: Essay

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

Ans:-

1. Provides a Clear Network Overview
2. Simplifies Troubleshooting
3. Supports Efficient Network Management
4. Aids in Security and Compliance
5. Helps in Disaster Recovery
6. Supports Staff Training & Handover
7. Assists in Future Planning