**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 address to device

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

**Ans :** False

Reason : TCP is a connection-oriented protocol that provides reliable, ordered , and error checked delivery of data between application communicating over a network.

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

**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 :**

- Identify devices & coverage area and needs internet.

- get a modem,wifi router and plug the modem into the router and turn them on.

- then give a wifi name and strong password.

- connect device like computers, phones , and printer to wifi

- Change the router’s default password, turn on the firewall, and update software.

- Makes sure wi-fi works well & update setting.

**Section 4: Practical**

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

**Ans :**

- Plug the modem into the router , connect a computer, and turn them on.

- Open a browser on your computer, type the router’s address, and log in with your admin username and password.

- go to internet setting, choose Dynamic IP(DHCP) and save the changes.

- Go to LAN settings, turn on DHCP, set an IP range if needed and save.

- Restart the router, connect devices and see if the internet works.

**Section 5**

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

**Ans :**

* When network issues occur, documentation helps identify where devices are located and connect to making problem solving faster.
* Keeps track of IP address, devices & configuration so administrator can manage resources.
* It helps in upgrading or expanding the network and plan new connection without conflicts.
* Documents **security settings and access controls**, ensuring the network meets organizational or legal compliance requirements.
* Network documentation **saves time, reduces errors, and improves security and planning**, making it essential for both building and managing networks.