|  |  |  |
| --- | --- | --- |
| **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? | |
|  | 1. Assigning IP addresses to devices 2. Providing wireless connectivity to devices 3. Forwarding data packets between networks 4. Managing user authentication and access control   **Ans.** Forwarding data packets between networks |
| 2. What is the purpose of DHCP (Dynamic Host Configuration Protocol) in a  computer network? | |
|  | 1. Assigning static IP addresses to devices 2. Resolving domain names to IP addresses 3. Managing network traffic and congestion 4. Dynamically assigning IP addresses to devices   **Ans.** 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? | |
|  | 1. Router 2. Switch 3. Hub 4. Repeater   **Ans.** Switch |
| 4. Which network topology connects all devices in a linear fashion, with each device connected to a central cable or backbone? | |
|  | 1. Star 2. Bus 3. Ring 4. Mesh   **Ans.** Bus |

**Section 2: True or**

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 and outgoing network traffic based on predetermined security rules

**Ans.** True

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

**Ans.** Describing the steps that involves the setting of a wireless network for SOHO

Steps:

1. We have to plan a Network Layout.
2. Then we have to Access our Network Requirement.
3. Choose a Wireless Router.
4. Connect Router with internet and Access the Router Setting.
5. Configure Basic Router Setting and Optimize Network Setting.
6. Secure the Network and Connect Devices with Network.
7. Check the Network
8. Regular Network Maintenance.

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

**Ans.**

* Network documentation is crucial for building, managing, and maintaining networks, whether they are small home-office networks or large enterprise systems. It refers to the process of creating detailed records that outline the components, architecture, configurations, and operational procedures of a network.
* Proper documentation can improves the security, and reliability of a network, and is valuable in various contexts.
* It also helpful for the problems like **Improving in Troubleshooting and Resolution of the Problems, Security, Management, Performance, Etc.**

**Section 4: Practical**

#### Section 5:

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

**Ans.**

* DHCP (Dynamic Host Configuration Protocol) it allows devices on your network to provide IP Address and other information’s.
* There is some steps to configure the Router with Internet Access using DHCP.

1. We have to reset the router and connect it with computer.
2. Access the router Admin Panel with its IP Address and User Name/Password.
3. Configure Router with Internet.
4. Enable the DHCP Setting on the Router.
5. Configure it and Test the Internet Connection.
6. Use It.