**MAHEE SHAH**

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| **Assignment: module -5 Network Fundamentals and Building Networks** | |  |
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| **Section 1: Multiple Choice** |  |

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| 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- (a) and (c) both but its core is to send data packets as it works in network layer of OSI model and assigning ips too.** |
| 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-(d) As the name suggests from Static, default and dynamic it is responsible for assigning ip dynamically** |
| 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- (b) Multi -layer 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- (b) Bus** |



**Section 2: True or**

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.

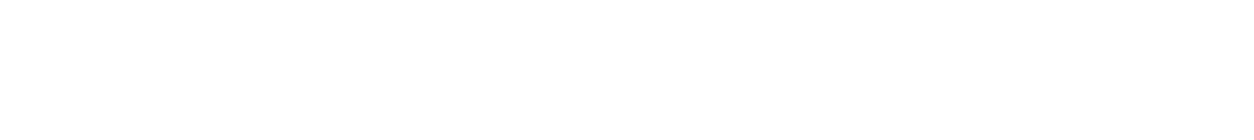
**ANS- True, VLANs permit the administrator to manage the network at large more simply.**

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- True, TCP is more secure and connection- oriented.**

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, firewall is a security device to protect networks from threats.**



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

ANS- we will need a modem, a router and devices to connect.

* **Plug the modem into router and power them on.**
* **Then we will have to access router settings by going to web browser and typing routers ip, logging in and changing the network name and password.**
* **Router can be then connected to firewall for security measures.**
* **Now connect firewall to a switch to further connect it to the devices to the new network using the password.**
* **Modem provides the link between your Internet Service Provider (ISP) and your network. But there r modem-routers available, in those cases u wouldn’t need a sperate modem.**



**Section 4: Practical**

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

ANS- **Plug the modem into router and power them on.**

* **Then we will have to access router settings by going to web browser and typing routers IP, logging in and changing the network name and password.**
* **Find the DHCP settings in the router’s default setting accessed by u from the browser.**
* **Enable DHCP. This allows the router to automatically assign IP addresses to devices on your network.**
* **Save the changes.**
* **devices will now automatically get IP addresses and connect to the internet via the router.**



**Section 5:**

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

**ANS-**

* **Helps quickly set up and configure network devices.**
* **Makes it easier to find and fix problems.**
* **Helps in maintaining the network.**
* **Helps restore the network quickly after failures.**