**Module -5 Network Fundamentals and Building Networks**

**Section 1: Multiple Choice**

1. What is the primary function of a router in a computer network?

- c) Forwarding data packets between networks.

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

-c) Converting domain names to IP address

3. Which network device operates at Layer 2 (Data Link Layer) of the OSI model and forwards data packets based on MAC addresses?

-b) Switch

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

-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.

- true

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

- False

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.

- true

**Section 3: short question**

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

- Step 1: Hardware Setup.

Step 2: Access Router Settings.

Step 3: Configure Basic Settings.

Step 4: Security Settings.

Step 5: Device Configuration.

Step 6: Testing.

**Section 4: Practical**

9. Describe the process of troubleshooting network connectivity issues.

- > There are some step of troubleshoot connectivity issues using the ping command are as follow:-

1. In first step, we will see the basic connectivity test to the host or we see ping in the local IP address.
2. In the second step, we see ping in the gateway, so we give command ‘ipconfig’(Windows) or ‘ipconfig’/’ip a’ (Linux/Mac).
3. In the third step, the ping in a domain name.
4. In the fourth step, to analyzing ping.
5. In the fifth step, to see troubleshooting based on results.
6. And in the last step ate seventh, to set ping in the advanced option.

10. Discuss the importance of regular network maintenance and the key tasks involved in maintaining network infrastructure.

- Importance of regular network maintaince:-

1. Enhanced security
2. Improved performance
3. Minimized downtime
4. Cost savings
5. Compliance and reporting

- Key tasks involved in maintaining network infrastructure:-

1. Monitoring and performance management
2. Security management
3. Configuration management
4. Backup and recovery
5. Firmware and software updates
6. Hardware maintenance
7. Documentation and reporting
8. Use management and access control
9. Capacity Planning and scalability
10. Vendor and support management