***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. c) Forwarding data packets between networks

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) Dynamically assigning IP addresses to devices

1. 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) Switch

1. 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 False***

1. 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

1. 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

1. 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

***Section 3: Short Answer***

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

Ans. [Topic is Remaining]

***Section 4: Practical***

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

Ans.

[ TO BE DONE IN LAB ]

***Section 5: Essay***

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

Ans. Network documentation is like a roadmap for understanding, managing, and troubleshooting a network. Here is why it’s so important:

1. Easier Problem Solving: When issues come up, having documentation helps find and fix problems faster because you can quickly see how everything is connected and configured.
2. Better Security: Documentation keeps track of who can access what on the network, making it easier to spot anything unusual and protect against unauthorized access.
3. Supports Growth: As the network expands, documentation helps with planning and adding new devices or updating software without disrupting things.
4. Consistency: With clear documentation, everyone on the team can follow the same setup standards, making things smoother for new staff or anyone taking over.
5. Compliance: Some industries require detailed network records. Good documentation makes it easier to meet these legal requirements.
6. Disaster Recovery: In case of a network crash or data loss, documentation helps rebuild things quickly by showing all the device settings and connections.

In short, network documentation makes a network easier to manage, secure, and grow. It saves time and helps avoid issues, which is key for effective network management.