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?
   Ans: c) Forwarding data packets between networks

2. What is the purpose of DHCP (Dynamic Host Configuration Protocol) in a computer network?
   Ans: d) Dynamically assigning IP addresses

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

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

Section 2: True or False

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

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: Steps to set up a SOHO wireless network:
- Connect router to modem
- Login to admin panel
- Change SSID and password
- Enable WPA2/WPA3
- Configure DHCP
- Test connectivity

Section 4: Practical Appliaction.

9. Demonstrate how to configure a router for Internet access using DHCP (Dynamic Host Configuration Protocol).
Ans: Practical Application: Configuring a Router for Internet Access Using DHCP
   - Connect to the Router:
     Open a browser - enter the router's IP (e.g., 192.168.1.1) - log in.
   - Go to WAN/Internet Settings:
     Find Internet Setup / WAN Setup in the admin menu.
   - Select Connection Type:
     Choose DHCP or Automatic IP (router will get IP from ISP automatically).
   - Save & Apply:
     Click Save/Apply to activate DHCP on the WAN interface.
   - Reboot if Needed:
     The router renews an IP from the ISP; check Status page to confirm it has received an IP, DNS, and gateway.

Section 5: Essay

10. Discuss the importance of network documentation in the context of building and managing networks.
Ans: Network documentation is crucial because it gives a clear map of how the network is built and configured. It speeds up troubleshooting, helps prevent mistakes during maintenance, and makes upgrades easier. It also ensures consistency in IP addressing, device setups, and policies. Good documentation helps new technicians understand the network

quickly and strengthens security by revealing unauthorized changes or weak points. Without it, managing a network becomes messy, slow, and error-prone.