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

✅ **c) Forwarding data packets between networks**

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2. What is the purpose of DHCP (Dynamic Host Configuration Protocol)?

✅ **d) Dynamically assigning IP addresses to devices**

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3. Which device operates at Layer 2 of the OSI model and forwards data using MAC addresses?

✅ **b) Switch**

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4. Which topology connects all devices in a linear fashion with a central cable (backbone)?

✅ **b) Bus**

True or False: A VLAN allows logical segmentation of a single physical network into multiple broadcast domains.

✅ **True**

True or False: TCP is a connectionless protocol that provides reliable, ordered, error-checked delivery.

❌ **False**
Correct statement: TCP is **connection-oriented**, not connectionless.

True or False: A firewall monitors and controls network traffic based on security rules.

✅ **True**

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

1. Ans- **Identify requirements** – number of devices, internet usage.
2. **Select equipment** – modem, wireless router, optional switch/extender.
3. **Connect modem to router** using an Ethernet cable (WAN port).
4. **Power on devices** and access router settings through a browser.
5. **Configure Wi-Fi** – set SSID, choose WPA2/WPA3 security, create a strong password.
6. **Set network options** – DHCP, guest network, firewall, etc.
7. **Place router centrally** for good coverage.

8. **Test Wi-Fi** on multiple devices.
9. **Update firmware** for security and performance.
10. **Document settings** – store SSID, password, and router login info.

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

Ans- Connect the modem to the router's **WAN/Internet** port.

Open a browser and log in to the router (e.g., **192.168.1.1**).

Go to **Internet/WAN settings**.

Set **Connection Type = DHCP** (Obtain IP automatically).

Save/apply the settings.

Check the router's **Status** page to confirm it received an IP from the ISP.

Test the internet connection.