****

**Computer Network (lab)**

**Name Zainab Bibi**

**Roll no su92-bssem-f22-164**

**Section 5D (SE)**

**Submitted to** Sir Raskih Ali

**Superior university Gold Campus Lahore**

**Q1:What is “DHCP, VLAN & DNS”, explain with Example**

### ****DHCP (Dynamic Host Configuration Protocol)****

* **Automatically assigns IP addresses to devices in the network, saving time and avoiding manual configuration errors**.
* **Example**:
  + A DHCP server dynamically assigns IPs (e.g., 192.168.10.2, 192.168.20.3) to PCs in VLAN 10 (IT) and VLAN 20 (HR).
  + Each PC receives a unique IP, default gateway, and DNS settings automatically.

### ****2. VLAN (Virtual Local Area Network)****

**Segments a single physical network into logical sub-networks for better management and security.**

* **Example**:
  + VLAN 10 (IT): All IT department devices are grouped together.
  + VLAN 20 (HR): HR department devices are grouped separately.
  + Each VLAN communicates internally and can be routed via the router or Layer 3 switch for inter-VLAN traffic.

### ****3. DNS (Domain Name System)****

* Resolves domain names (e.g., www.example.com) to IP addresses.
* **Example**:
  + A DNS server in the network converts www.example.com to 93.184.216.34 so devices in VLANs can access the internet or internal services.