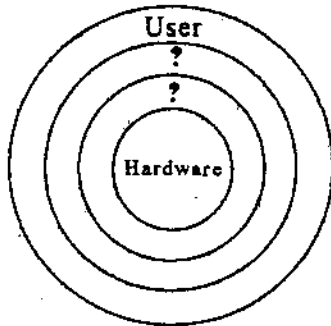1. Please give a short description on the **2's complement** (using 8 bits examples) and demonstrate the following computations with it.   (10%)
   (a). −7−25.   (b). −5+5.

2. Please fill out the missing terms (?) and explain the whole diagram.

   (10%)

3. Describe the difference between **WAN** and **LAN**.   (10%)

4. What are the difference among **simplex**, **half-duplex**, and **full-duplex** data transmission?   (10%)

5. How does **Carrier Sense Multiple Access** with **Collision Detection**, or **CSMA/CD** of the **Ethernet** operate?   (15%)

6. What special features should be included in a **NFS** (Network File System) in addition to a standard file system?   (15%)

7. What is a **RAID**?   (10%)

8. **Definitions:**   (20 %, 5% each)
   a.   **SSL**.
   b.   **TCP/IP**.
   c.   **ISP**.
   d.   **SNMP**