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**Subject: CN LAB**

**Project: Small Office Network**

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**Section: 5A**

**Roll No: BSDS-F22-024**

**Small Office Network**

* **Network Components**

**1. Routers**

* **Main Router**:
  + **IP Address**: 10.0.0.1
  + Central hub connecting all departments and the server room.
* **Router-1**:
  + **IP Address**: 10.0.0.2
  + Sub-router handling IT Department and Chairman Office traffic.

**2. Switches**

* **Computer Department Switch**:
  + Connects all devices within the Computer Department.
* **IT Department Switch**:
  + Manages communication for the IT department.
* **Chairman Switch**:
  + Handles connectivity for the Chairman Office devices.
* **Server Room Switch**:
  + Facilitates data exchange within the Server Room.

**3. Devices**

* **PCs**:
  + Various departments have employee and managerial PCs, with unique IP addresses in their respective subnet.
* **Printers**:
  + Each department is equipped with a printer for local use.
* **Servers**:
  + Located in the **Server Room**, critical for organizational applications and data storage.
* **Laptop**:
  + Assigned in the **Server Room** for administrative or monitoring tasks.
* **Departmental Details**

**Computer Department**

* **Subnet**: 192.168.3.0/24
* **Devices**:
  + 3 Employee Computers (192.168.3.2-192.168.3.4)
  + 1 Manager Computer (192.168.3.5)
  + Printer (192.168.3.6)
* Connected via **Computer Department Switch** to the Main Router.

**IT Department**

* **Subnet**: 192.168.2.0/24
* **Devices**:
  + 2 Employee Computers (192.168.2.2, 192.168.2.3)
  + 1 Manager Computer (192.168.2.4)
  + Printer (192.168.2.5)
* Connected via **IT Department Switch** to Router-1.

**Chairman Office**

* **Subnet**: 192.168.1.0/24
* **Devices**:
  + Chairman Computer (192.168.1.2)
  + Vice Chairman Computer (192.168.1.3)
* Connected via **Chairman Switch** to Router-1.

**Server Room**

* **Subnet**: 1.0.0.0/24
* **Devices**:
  + Server (1.0.0.2)
  + Laptop (1.0.0.3)
* Connected via **Server Room Switch** to the Main Router.

**Routing and IP Allocation**

* The network uses private IP addressing for inter-department communication.
* Routing is handled hierarchically, with the **Main Router** at the core.
* Sub-routing is implemented via **Router-1** for efficient distribution in the IT Department and Chairman Office.