1. **Assigning IP Addresses:**
2. to each department with correct subnets
3. to each router’s network interfaces

1st Floor:

* IT- VLAN 10: 192.168.1.0 /24
* Admin – VLAN 20: 192.168.2.0 /24

2nd Floor:

* Sales- VLAN 30: 192.168.3.0 /24
* HR- VLAN 40: 192.168.4.0 /24
* Finance- VLAN 50: 192.168.5.0 /24

3rd Floor:

* Quality- VLAN 60: 192.168.6.0 /24
* Maintenance- VLAN 70: 192.168.7.0 /24
* Production- VLAN 80: 192.168.8.0 /24

R-F1 and R-F2: 10.10.10.8 /30

R-F1 and R-F3: 10.10.10.4 /30

R-F2 and R-F3: 10.10.10.0 /30

1. **Configure VLANs**

* Assign each department to different VLANS
* Configure static access mode to the switchports that are connected to end hosts
* Configure trunk mode to the switchports that are connected to the router

1. **Configure Router on a stick (ROAS)**

* Create sub interfaces on the routers with encapsulation type of dot1q
* Assign IP addresses for each sub interfaces with a correct subnet

1. **Configure OSPF as the dynamic routing protocol**

* Configure OSPF for each router serial connection
* For serial connections, configure the clock rate to 64000 Kbps
* Configure OSPF for each router sub interfaces

1. **Configure DHCP**

* Enable DHCP service on each router (to configure the routers as DHCP servers)
* Create a DHCP pool & network for each department
* Configure each router as the default gateway and the DNS server
* Access to each PCs to obtain their IP addresses with DHCP

1. **Configure SSH**

* Configure SSH on all router’s VTY line
* Assign the PC on IT department as Test-PC to use it for remote login.

1. **Configure Port Security**

* Configure port-security to IT dept switch to only allow Test-PC to access port f0/2
* Violation mode: shutdown
* Mac address: sticky