

CSE 4412: Data Communication and Networking Lab Final

Time: 60 minutes

Scenario

You are the IT Specialist in IUT and you have been given the task of network configurations. IUT has been assigned an IP address 192.168.X+5.0 where X is the last 2 digits of your Student ID. There are 2 academic buildings in IUT each using a router. In each building, there are PCs for teachers, students and administrators. There are 13PCs for teachers, 50PCs for students and 2PCs for admins in each of the buildings. There is a central router which connects the two buildings.

Task

Make a proper network configuration by taking into account the requirements mentioned below:

- Make a proper topology while keeping at least 2 PCs for each group of people in each building.
- Make proper subnet masks to accommodate the required number of PCs for each group in each building.
- Building-1 is using RIP and Building-2 is using OSPF. Use redistribution to ensure proper connectivity.
- Configure VLANs for the groups and also Inter-VLAN routing.
- Make SPAN such that the teachers can track the activities of the students (just do it for the ports where you are connecting the two PCs).

*You will be expelled from the exam if you are seen observing any unfair means.
Using large language models is also prohibited.*

This is an exam. No queries regarding the question will be entertained. You must follow the instructions and do the task as you understand.