Question 1:

The design of 3-Tier Datacenter advises having L3 routing between aggregation and core routers and L2 switching between access switches. This question explores the alternate setup:

a) Can we have a single L2 domain for a whole dataCenter?

b) Will there be a problem if the whole dataCenter is in a single L2 domain?

c) List pros and cons from an application deployment point of view of having whole dataCenter in a single L2 domain?

Question 2:

a) Explain in brief the need for Spanning Tree Protocol (STP)

b) Give a situation when you can disable the STP as a network administrator.

c) Are there possible disadvantages of STP? If yes, explain them.

Question 3:

There are two popular ways of placing a switch in rack, and they are known as Top of Rack (ToR) and End of Rack (EoR). The cabling is done in such a way that each machine is connected to two different switches for the purpose of providing resiliency from the perspective of switch of network failure. This question explores the implications of these placement approaches from resiliency perspective:

a) Make an argument in favor of each of these placement policies from a resiliency perspective.

b) If the dataCenter demands the highest possible resiliency, which switch placement will you prefer as a dataCenter designer?
**Question 4:**

Slides 35 and 36 talks about "Two IP Subnets sharing VLANS" and "Two VLANS sharing sharing a subnet"

a) Give a scenario where you will use each of these setup?

b) Which deployment would you prefer if you are tight on the budget? Why?

**Hand In Instructions**

This is a paper exercise. Please hand it in during the exercise session on the due date.