

## ANC4 Tutorial 3

1. In Layer 2 802.1D routing, why is looping a potential problem.
2. A 24-port 100Mbps Ethernet switch requires what internal bandwidth to allow all ports to operate sustained full duplex at full speed at one time?
3. Explain how a bridge may end up not being used in an 802.1D internetwork. Could this happen to an IP router in the internet? Is such an unused bridge useless?
4. Suppose a company wishes to create an Internet VPN using remote bridging between two widely separated Ethernet LANs, A and B, with 4 and 3 machines respectively.
  - a. Explain how you would allocate IP numbers to the machines.
  - b. A machine on network A sends a UDP segment to a machine on network B. Explain what will happen and sketch the structure of the PDU leaving network A carrying the segment. State any assumptions.
  - c. Give two alternatives to using the Internet to link the sites.
5. Discuss how two machines on separate port-based VLANs can communicate
6. Explain how you would implement an IP-subnet based VLAN. How would two such VLANs communicate?
7. Explain why multicasting is necessary at both LAN and IP layers.
8. Why is multicasting useful in routing protocols?