1. What might limit the scalability (e.g., total number of stations) of Ethernet? How about token ring? Token bus?
2. Why is there a minimum packet size on Ethernet? How does the maximum size of the cable influence the minimum packet size?
3. Explain what it means, in token ring, for A=0, C=0. For A=1, C=1, and for A=1, C=0. How would each of these situations happen, and what should the sender do in each case?
4. Why in token ring must the packet travel completely around the ring? Why can’t the destination remove the packet from the ring?
5. In distance vector routing, is split horizon a “compatible” modification, in the sense that a router that implements it will interwork, without problem, with routers that don’t implement it?
6. In Dijkstra calculation in link state routing, why is it, when making a dotted line to node E solid, that you know you’ll never find a better path to E?
7. Calculate the Dijkstra tree from problem 8 in homework 2 from F’s viewpoint and also show the resulting forwarding table F will calculate.
8. Suppose a node with layer 2 address X wants to transmit a packet to a node with layer 2 address Y, and 2-byte Ethernet protocol type Z. Show the packet header in Ethernet format as well as 802.3 format.
9. How many OUIs are there? At $1000 apiece, how much would it cost to buy them all?
10. Why is it OK to violate the total length of an Ethernet if you connect two segments with a bridge, but not with a repeater?
11. In the picture on slide 28 (3 bridges connecting two LANs), how many copies of a packet would result on LAN 2 when a station transmitted a single packet on LAN 1 (assuming no spanning tree algorithm running).
12. Extra credit: Suggest questions you think would make good quiz or homework questions, on any of the material so far, along with answers. Email them to both me (radia@alum.mit.edu) and jialun@mit.edu. Also OK to propose problems that you don’t know the answer to, but would be interesting to ponder.