Assignment #1

Due: Wednesday, Feb. 11, 2004

The topology of a company network is shown as below. There are 2 LANs inside the company: Ethernet 1 and FDDI. The network ID of Ethernet and FDDI are 200.10.2.0, 100.10.1.0 respectively. They are both class C network. The two LANs are connected by a router R1 in the company premise. R1 is connected through PPP link to access routers R2 and R3.

1. Please reasonably give the ID’s of all networks, routers and hosts, if they are not given in the diagram.
2. Observing the restrictions in the following problems, make your own routes and give the routing tables for R1, R2 and R3.
3. Study the literature and find out all header formats and packet sizes required for problems below. Assign your own ethernet/FDDI addresses if necessary.
4. Suppose the application layer software in host A has 2000 bytes data to be sent to host B, show the content of the packet(s) in various layers when the data is passed by the application in host A all the way down through A’s protocol stack and finally reaches the application in host B. You have to show the value of every field in the headers, if they are known. The diagram below is protocol stack that the data needs to go through.

5. The application of B sends 2000 bytes data to A. Do the same thing as that in problem 4.

6. The application of A sends 2000 bytes data to host C. This time router R1 will send the packet through PPP link to R2. Repeat problem 4.