

Student ID: _____

**COMPUTER NETWORKS
COMPREHENSIVE EXAMINATION
Spring 2001**

1. (25 pts.) Ethernet and Token Ring
 - Explain whether each of the two protocols guarantees delivery of a frame within a certain time period.
 - For each of the two protocols, discuss in *detail* how a collision can be detected and what the host does after a collision is detected.
 - Describe the purpose of Address Resolution Protocol (ARP) and how it works.

2. (15 pts.) Discuss two differences between the Token Ring and Slotted Ring Protocols.

3. (15 pts.) Briefly, explain packet switching. What message switching problems are solved by the use of packet switching?

4. (25 pts.) UDP and TCP

- Discuss the main difference between UDP and TCP.
- Discuss two tradeoffs in choosing UDP or TCP.
- Discuss an application protocol for which UDP is more appropriate. Explain.
- Discuss an application protocol for which TCP is more appropriate. Explain.

5. (20 pts.) Describe three ways that the transport layer enhances the Quality of Service provided by the network layer?