

Student ID: \_\_\_\_\_

**COMPUTER NETWORKS  
COMPREHENSIVE EXAMINATION**

- 1.A. Explain different types of fiber optics and show the schematic for a fiber optics data link and name the components used for this data link.
- B. In network terminology, what are DSL, LAN, GOSIP, and TCP abbreviated for?
- C. Explain Hamming Distance. What Hamming Distance is required to detect up to 8 bits in error?

- 2.A. Draw the signal representation for the binary values 1110011 in NRZ, Manchester Encoding, and Differential Manchester Encoding. Assume a 5 MHz clock.
- B What is an IP address and also explain different IP address classes.
- C. Briefly, explain packet switching.

- 3.A. How can a new organization register a new name on the Internet and how do the hosts on the Internet will find this new server.
- B. Explain the operation of the Ethernet (IEEE 802.3) protocol.
- C. What is firewall and how does it work?