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?