1. (15%) Describe new features of IPv6 (Internet Protocol version 6) compared to IPv4.

2. (20%) Describe the difference between circuit switching and packet switching techniques.

3. (15%) Consider a CSMA/CD network running at 1 Gbps over a 1-km cable with no repeaters. The signal speed in the cable is 200,000 km/sec. What is the minimum frame size? (note: 1 Gbps= 1000000000 bits/sec).

4. (20%) 10 packets are sent from source A to the destination B, use the diagrams to illustrate the packets sent between A and B by using Go-back-N scheme (window size=3) according to the following:
   (1) Packet 2 and packet 6 are lost
   (2) The acknowledgement message for packet 3 is lost

5. (10%) The maximum payload of a TCP segment is 65495 bytes. Why was such a strange number chosen?

6. (20%) Explain the following terms:
   (1) ARP
   (2) Virtual circuit
   (3) IEEE802.11
   (4) SYN Flooding attack