Problem Set: 6 Link Layer

1 Essay Questions

1. If all the links in the Internet were to provide reliable delivery service, would the TCP reliable delivery service be redundant? Why or why not?

2. Describe polling and token-passing protocols using the analogy of cocktail party interactions.

3. Why is an ARP query sent within a broadcast frame? Why is an ARP response sent within a frame with a specific destination MAC address?

4. In Section 5.3, we listed four desirable characteristics of a broadcast channel. Which of these characteristics does slotted ALOHA have? Which of these characteristics does token passing have?

2 Problems

1. Suppose the information content of a packet is the bit pattern 1110 0110 1001 1101 and an even parity scheme is being used. What would the value of the field containing the parity bits be for the case of a two-dimensional parity scheme? Your answer should be such that a minimum-length checksum field is used.

2. Consider the 5-bit generator, G=10011, and suppose that D has the value 1010101010. What is the value of R?

3 Notes

- Some of the sheet questions have online solutions, you are NOT allowed to copy from the Internet neither from a friend, yet it's so much encouraged for all of you to have any form of ideas-discussion (you can use MS team). Delivering a copy will be severely penalized for both parties, so delivering nothing is so much better than delivering a copy.

- It's encouraged that you take a look at the Homework Problems for chapter 5, from the kurose/Ross reference.

Good Luck