Ve489 Computer Networks

Prof. Xudong Wang

Homework Set 3

Due date: June 16, 2023

1. Explain the differences and relationship between multiple access and medium access control.
2. What is static channelization? Why do we need guard time for TDMA?
3. Why random access protocol is useful for TDMA base reservation protocol? Use slotted Aloha as an example.
4. Answer following questions about random access protocols:
    1) What is the vulnerable period for Aloha? How about slotted Aloha? Explain it.
    2) What is vulnerable period of CSMA? How can we make sure the performance of CSMA is better than Aloha?
    3) Why collision detection (CD) can improve performance of CSMA?
5. Explain the basic mechanisms of three different types of token-ring based polling protocol?