

>>> Assignment #5 for Computer Networks (EEL 4781) <<< Due on 11/17/09 at the beginning of class

This assignment covers material from chapters 5 and 6 of the textbook and as covered in class lecture.

Problem #1

Find Metcalfe's 1976 CACM paper titled "Ethernet: Distributed Packet Switching for Local Computer Networks" and study the performance evaluation section. Consider a 10 Mb/s Ethernet with a slot of 64 byte. Compute the efficiency for minimum and maximum length frames for 1, 5, 10, and 1000 stations continuously queued to transmit frames on the Ethernet. What is the worst case?

Problem #2

In class we discussed how Ethernet exhibits an effect called the "capture effect". Wikipedia has an incomplete entry on the capture effect here: http://en.wikipedia.org/wiki/Channel_capture_effect. Your task is to find the original and seminal references for the capture effect and update the Wikipedia entry appropriately. I realize that not everyone can do this (and that someone will go first – I will know this is from the Wikipedia history page). In the end, everyone should print-out the updated entry and everyone will be graded equally.

Problem #3

Do problem P29 (page 519) from the text book.

Problem #4

Do problem P31 (page 519) from the text book.

Problem #5

Do problem P33 (page 519) from the text book.

Problem #6

Do problem R4 (page 588) from the text book.

Problem #7

Do problem P5 (page 590) from the text book.

Problem #8

Do problem P6 (page 590) from the text book.

Note

The TA and I are here to help you! Make use of help if you need it.