

EECS 122: Introduction to Communication Networks

Homework 4

(8 points)

Due: 1999-Sep-24-Fri (in class)

Problem 1: chapter 3 problem 6. (2 points)

Some earlier printings of the textbook contain an error; in later printings, there is no D in the bottom oval.

Problem 2: chapter 3 problem 7. (2 points)

Illustrate Dijkstra's algorithm with node A as the source. Draw a sequence of diagrams as in figure 3.13.

Problem 3: chapter 3 problem 13. (2 points)

The problem intended to ask "How many packets are transmitted by the flooding of a single message?" Assume that the message fits in one packet, and that all links are point-to-point and bidirectional.

Problem 4: (2 points) Suppose an IP datagram is fragmented into 10 fragments, each with an independent loss probability of 1%. What is the probability of receiving the datagram correctly at the destination if (a) the datagram (each fragment) is transmitted once; (b) the datagram (each fragment) is transmitted twice?

Problem 5: (hands-on) Read the man page of the Unix utility `netstat`. Use the command `netstat -i` (plus other command-line options) to find the various network interfaces of your host, their MTU, their current status, etc. Use `netstat -r` (plus other command-line options) to find the gateways (routers) of your host to various destination networks.