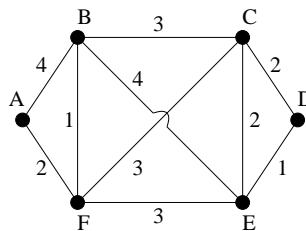


CSc 450/550: Computer Networks (Summer 2006)

Assignment 3

To be handed in at the lecture on July 20, 2006

1. In a few sentences, please compare “slow start” and “congestion avoidance”; please compare “fast retransmit” and “fast recovery”.
2. UVicNet has an IP address space 142.104.128.1/16, UVic EngNet has an IP address space 142.104.104.1/19. Please explain your answers to the following questions.
 - (a) Which address class (A, B, C, D or E) does UVicNet have?
 - (b) How many computers can be accommodated in UVicNet at most?
 - (c) How many networks of the same size as UVic EngNet can be accommodated in UVicNet at most?
 - (d) For the computers with the following IP addresses: 142.104.107.237, 142.104.100.46, 142.104.128.254, and 142.104.85.64, which are in UVic EngNet?
3. Given an IP packet (no IP options) of 4000 bytes, please write down the “Total length”, “Fragment offset” and “MF” of its all IP fragments of 1000 bytes each at most.
4. Please find the shortest path from A to all other nodes (links are label by distance).



5. For a character in its binary representation 1110110
 - (a) Please write down the character in Hamming coded format with even parity.
 - (b) Given the generator polynomial $x^3 + x + 1$, please write down the CRC-appended bit string of the above Hamming coded character.
 - (c) Given the frame flag 0110, please write down the bit stuffed string (including flags) for the above CRC-appended bit string.

— END —