Tutorial 3

Question 1

A UDP segment (header + data) is represented in hexadecimal 6660 5555 8F0C. Calculate the checksum and represent it in hexadecimal.

Question 2

Suppose Host A sends one segment containing 16 bytes data with sequence number 330 over a TCP connection to Host B. In this segment, the acknowledgment number must be 346. True or false?

Question 3

Suppose Host A sends three segments to Host B over a TCP connection. Each segment has the size of 40 bytes. The segment has no options field. The first segment has sequence number 330.

(a) How much data is in each segment?

(b) What is the sequence number of the third segment?

(c) If the first segment is lost but the second segment arrives at Host B, what is the acknowledgment number in the segment that Host B sends to Host A?

Question 4

Host A sends a file of 33 Mbytes to Host B. Assume the maximum segment size (MSS) is 128 bytes. The transport layer, network layer, and data-link layer add headers of a total size of 66 bytes to each segment before the resulting packet is sent out over a 1 Gbps link. Assume no congestion, calculate the time required to transmit the file.