Tutorial 8

Question 1

Suppose that a SW ARQ system with 1-bit sequence numbering has a time-out value that is less than the time required to receive an ACK. Station A sends 5 frames to station B and no errors occur during transmission. Sketch the sequence of frame exchanges that transpire between stations A and B.

Question 2

A telephone modem is used to connect a personal computer to a host computer. The frame size is 256 bytes. The speed of the modem is 56 Kbps and the propagation delay plus processing time is 100 ms. Frame overhead and ACK overhead are both 25 bytes. Assume a bit error rate of 10^{-4}.

(a)   Find the efficiency for SW ARQ.
(b)   Find the efficiency of GBN ARQ if 3-bit sequence numbering is used.

Question 3

Perform the bit stuffing procedure for the following binary sequence:

1101111111011111110101

Question 4

Perform the bit de-stuffing procedure for the following binary sequence:

1110111101111100111110