ITS323 – Quiz 4

Name: _____ ID: _____ Marks: _____ (10)

Question 1 [4 marks]

Consider stop-and-wait flow control being used on an error-free link from A to B. Device A has 3 frames to send to B. The link propagation delay is 5us, the frame transmission time is 100us and the ACK transmission time is 5us. If A starts transmitting at time 0, what is the minimum time before which A can receive the entire ACK for the last transmitted frame? You must draw a diagram illustrating the exchange of frames [4 marks].

Question 2 [2 marks]

Consider question 1 above. If you want to keep the link efficiency above 50% and also want to use a simple flow control protocol, which protocol do you think is most appropriate: stop-and-wait (as in question 1) or sliding-window? Explain your answer.

Question 3 [4 marks]

Consider Selective-Reject ARQ being used on a link from A to B, using a maximum window size of 7. The link has a very long propagation delay (compared to delay of transmitting multiple frames). Device A has 4 frames to send to B. B sends an ACK for each data frame. If the 2nd frame transmitted by A is lost, then draw a diagram illustrating the exchange of frames (up to the point where all 4 frames have been successfully acknowledged). Be sure to clearly label the sequence and ACK numbers. [4 marks]