Computer Communications and Networks (COMN) 2016/17, Semester 2

Assignment Part 1 Results Sheet

Forename and Surname:	Isabella Chan
Matriculation Number:	s1330027

Question 1 – Number of retransmissions and throughput with different retransmission timeout values with stop-and-wait protocol.

Retransmission timeout (ms)	Number of re-transmissions	Throughput (Kilobytes per second)
5	2150.2	45.1988
10	1054.6	44.2336
15	754	40.0932
20	242	39.3788
25	199	38.655
30	202.2	37.0576
40	213.8	33.526
50	192	32.1144
75	193.2	27.2116
100	193.8	23.7398

Question 2 – Discuss the impact of retransmission timeout value on number of retransmissions and throughput. Indicate the optimal timeout value from communication efficiency viewpoint (i.e., the timeout that minimizes the number of retransmissions and keeps the throughput as high as possible).

The higher the retransmission timeout value, the smaller the throughput and thus less efficient. The number of re-transmission is high initially with small timeout values, but it decreases as timeout value increases. The optimal value for timeout should be 20ms, since it has one of the lowest retransmission numbers but keeps the throughput relatively high. With 5ms in delay, 20ms timeout makes sense since it is 5ms out and 5ms in, and then another 5ms out and 5ms in for sender and receiver to send packets in one cycle.