Computer Communications and Networks (COMN) 2018/19, Semester 2

Assignment Part 1 Results Sheet

Forename and Surname:	Akshay Chandiramani
Matriculation Number:	S1558717

Question 1 – Number of retransmissions and throughput with different retransmission timeout values with stop-and-wait protocol. For each value of retransmission timeout, run the experiments for **5 times** and write down **average number of retransmissions** and **average throughput**.

Retransmission timeout (ms)	Average number of re-transmissions	Average throughput (Kilobytes per second)
5	5026	48.77
10	2811	46.21
15	1094	43.90
20	234	41.17
25	216	39.83
30	192	38.17
40	208	35.12
50	199	31.32
75	182	28.97
100	187	24.42

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 average number of retransmissions are seen to generally decrease with an increase in retransmission timeout period until they reach values between 180 and 240, and then remain the same with only very little change with the increase in the retransmission timeout. The average throughtput seems to linearly decrease with the increase in the retransmission timeout period, which is understable considering the system has to wait longer for the acknowledgment to arrive if none is sent back. The optimal timeout value here seems to be 30ms, as for a very high throughput, the average number of retransmissions are significantly low. This value seems to be the best from a communication efficiency viewpoint.