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

Assignment Part 1 Results Sheet

Forename and Surname:	Jianmeng Yu
Matriculation Number:	1413557

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	5042	48.78
10	3321	46.21
15	1573	43.90
20	331	41.81
25	213	38.17
30	250	35.12
40	187	35.12
50	220	31.36
75	192	27.44
100	187	24.39

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 optimal timeout value would be 20 – 30 ms according to the test result, it seems that under 5% plr at both pipe. Timeout value below 20 would not be advisable due to the propagation delay, where the ACK packet took about 20 ms to arrive, resending packet before ACK packet can arrive would be wasting resources. Timeout value above 30 doesn't decrease the re-transmission, so it would be unnecessary waiting.