Assignment-5 Pseudo code:

Step 1: Start the program with command line parameters Ki, Km, Kn, Kf, Ps and total number of segments (T) to be sent
Step 2: Intialize threshold value and Receiver Window Size(RWS)
Step 3: Calculate the initial size of Congestion Winodw (CW) using "CWnew = Ki * MSS" in bytes
Step 4: Print to file CWnew value and the update number (u) which is 0 initially.

For every iteration "i" till the condition is satisfied (i.e., required number of segments (T) needed to be sent) do the following steps (Steps 5 - 11): // Loop 1

Step 5: Determine the number of segments (N) to be transmitted in each iteration by dividing the MSS value using the CWnew value.
In real world, we ought to transmit the segment and wait for receiving the acknowledgement for the segment sent.
But in this assignment, we will abstract that process and rather use the concept of probability to determine whether we receive an acknowledgement for every segment to be transmitted.

Step 6: So for every segment from 1 to N, Calculate the probability of receiving the acknowledgment (Ps) using rand() in C and execute steps 7 to 11 // Loop 2
Step 7: If an acknowledgemet is Received, it means no congestion hence go to Step 10, otherwise congestion has happened and go to Steps 8 and 9

// Execute steps 8 and 9 when congestion happens
Step 8: Recalculate the new threshold value using the current value of congestion window CWnew i.e., threshold = CWnew/2
Step 9: Calculate new reduced window size using "CWnew = max(1, Kf â^— CWold)", // multiplicative decrease due to congestion as the ack didn't come to sender

// Execute step 10 when there is no congestion
Step 10: Check the CWsize < threshold
Then "CWnew = min(CWold + Km â^— MSS, RWS)" // Exponential growth phase
Else "CWnew = min(CWold + Kn â^— MSS â^— MSS/CWold, RWS)" // Linear growth phase

Step 11: Print to file the CWnew and the latest update number (i.e. u = u + 1).

// End of loop 1 and loop 2

Step 11: End of program