1. What are the 3 timers used in the TCP layer. Explain their purpose.

2. Explain the “silly window syndrome”

3. Explain the need for dynamic window sizes in TCP.

4. A process A initiates a TCP connection to a process B. Over the connection, A sends 10,000 bytes of application data to B. Process B sends 5,000 bytes to A. Make the following assumptions:
   - the starting sequence numbers of A and B are 100,000 and 200,000 respectively;
   - A and B allocate buffers of size 8000 bytes to process the connection.
   - The maximum number of application data bytes is restricted to 1200 bytes in each packet;

Make other reasonable assumptions if required. However, you should explicitly specify the assumptions.

Indicate the contents of the TCP headers (SEQ numbers, ACK numbers, flags set, Window size) of all packets exchanged between A and B.

Indicate the difference (if any) in the TCP headers of packets exchanged for the following two cases:
   a) A and B are processes running on two different computers;
   b) A and B are processes running on the same computer.