<center>Quiz 9: November 24 2015</center>

Left Neighbor: _____   Right Neighbor: _____

This is a closed book quiz

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1. (2 points) What are the steps to establish a TCP connection? You don't have to use the correct acronym if you explain colloquially what is up. A picture might help here.

<div style="color:red">

Open Connection
PC1 to PC2: SYN
PC2 to PC1: SYN+ACK
PC1 to PC2: ACK

Close Connection
PC1 to PC2: FIN+ACK
PC2 to PC1: FIN+ACK
PC1 to PC2: ACK

</div>

2. (2 points) Explain very briefly why it is that UDP can't perform congestion control and TCP can.

<div style="color:red">UDP does not have any handshaking protocols, while TCP does. TCP 3-way handshaking protocol aids congestion control, because it gets feedback from the recipient.</div>

3. (2 points) Explain very briefly how TCP window size affects how many messages a server is willing to send before it receives an acknowledgement.

<div style="color:red">TCP has a set window size which allows only a certain amount of bits to be sent before requiring an acknowledgement. The window size can change in depending on capacity of network and recipient.</div>

4. **(4 points)** Describe briefly what a NIC does when it gets an Ethernet packet that ultimately contains a UDP datagram. Make sure you use these words in your response: *payload, Ethernet frame (or packet), IP address, port, application, ICMP.* Use the other side of this page if you need more space.

<div style="color:red">NIC will decapsulate the Ethernet packet and look at layer 3 headers in its payload. NIC using the ICMP will look for error messages in the packet. Then it will decapsulate the IP datagram and look at its layer 4 headers in the payload.
In the layer 4 headers will be the destination port for the data and the NIC will send the data to the CPU that will then send that data to the destination application.</div>