1. True or false (explain your answer) (3 points each)

1A. Abstraction and layering in network protocols allow researchers to innovate on specific protocols in the stack without modifying the entire network stack.

1B. In a heavily congested network, the queueing delay is primarily because the source and destination are far from each other.

1C. . A Web request should always begin with a DNS query.

Longer questions

2. Two variants of TCP---TCP Vegas and TCP Hop have been designed for specific scenarios **(4 points)**

TCP Vegas: Delay based congestion control that reduces the congestion window size based on delays rather than losses.

TCP Hop: A TCP protocol that does acknowledgements at each hop as well as sends end-to-end acknowledgments.

i. (i) Describe a scenario where you will use TCP Vegas over TCP Hop
ii. (ii) Describe a scenario where you will use TCP Hop over TCP Vegas. Explain your answer in both cases.

Short questions

3. Describe two reasons why Google was able to deploy SPDY in the Internet. Typically, deploying an Internet protocol before standardization is difficult **(2 points)**