CSE421 Quiz 2

Marks - 15 Time - 20 min

ID:	Name: Solution	Section:

1. What is the HOL blocking issue in HTTP/1.1? How does HTTP/2 attempt to solve it? **[5]**
2. Consider a short, **10 meter** link, over which a sender can transmit at a rate of **150 bps** in both directions. Suppose that packets containing data are **100 kb** long, and other packets are **200 bits** long. Assume that **N** parallel connections each get **1/N** of the link bandwidth. The initial downloaded object contains **10** referenced objects from the same sender.
    a. Calculate the time needed to fetch all the objects for parallel downloads via parallel instances of non-persistent HTTP. **[5]**
    b. Now consider persistent HTTP without parallel download. Do you expect significant gains over the non-persistent case? **Justify** your answer. **[5]**

2. a) Total # objects = 11

Tx speed for objects = $\frac{150}{11}$ bps

$\therefore$ RTT = $2 \times \frac{200}{\frac{150}{11}}$ s

$\therefore$ Non persistent fetching time

= $2 * RTT + \frac{100kb}{\frac{150}{11}}$

= $4 \times \frac{200}{\frac{150}{11}} + \frac{100k}{\frac{150}{11}}$

= 7920 s

b) Persistent → $2 \times \frac{200}{150} + \left(2 \times \frac{200}{150} + \frac{100k}{150}\right) \times 11$

= 7365.33 s