**CS 3516 (A18) – Quiz 3 –**
**Friday, September 7, 2018**

Student Name: _____

WPI Username: _____

Please answer the following questions using only the front side of this sheet of paper. **This quiz is closed book/notes. One page cheat-sheet is allowed**. *We will not grade the backside or any additional sheets of paper.* We will scan the quiz and return it electronically. To ensure it is properly scanned, please avoid wrinkling, folding, or otherwise distorting the paper. *You can use the back of the paper for any calculations you might have to perform.* Please mark exactly which question/sub-question you are answering. **(7 points + 2 bonus points.)**

**1. What transport layer protocol does HTTP use? What does an HTTP GET command do? Are there any other commands/methods besides GET with HTTP 1.0? (3 points)**

HTTP is a request response protocol that uses TCP for assured delivery (1 point). The HTTP GET command retrieves HTML files and other objects (1 point). Other commands in HTTP 1.0 include POST and HEAD (1 point).
[TA note: 1 point for each sub-question.]

**2. What is the purpose of the HTTP "COOKIE:" field? Are the values in the HTTP message's cookie field stored at the client or server or both? If yes, how are they stored, in a file or something else? Explain briefly. (3 points)**

A cookie can be used to maintain state between HTTP transactions. For example, if a user uses the same cookie in its HTTP requests whenever dealing with a given ecommerce site, that site can track all interactions with the user associated with that cookie. (1 point) [TA note: Not necessarily the same statement.] The client stores the cookie using a cookie file (1 point) and the server stores the cookie in the backend database (1 point).

**3. What is the default port number for HTTP? (1 point)**

80 (1 point).

**4. [Bonus Question] The round-trip time (RTT) between a client *C* and a web server *S* is 10ms. After establishing the TCP connection, it takes 5 ms to transmit one object from server *S* to client *C*. Suppose that the webpage has 10 objects with the same size. How long does it take from the client sending an HTTP request to receiving all 10 objects using a persistent HTTP connection. (2 points)**

Based on your in-class feedbacks, the following answers are all correct.

1. 10 ms *2 + 5 ms *10 = 70 ms (2 points).
2. 10 ms *2 + (10 + 5) ms *10 = 170 ms (2 points).
3. 10 ms + 5 ms *10 = 60 ms (2 points).
4. 10 ms + (10 + 5) ms *10 = 160 ms (2 points).

[TA note: 1 point for the calculation and 1 point for the final answer.]