

# **EE450 Introduction to Computer Networks**

## **Homework #4, Fall 2019**

**Due Thursday, October 3<sup>rd</sup>, 2019 in class**

### **Reading Assignment:**

Chapter 2

### **Problems to be solved:**

Chapter 2, Page 171: R1 (15 points)

1. List five nonproprietary Internet applications and the application-layer protocols they use.

2. Chapter 2, Page 171: R2 (15 points)

What is the difference between network architecture and application architecture?

3. Chapter 2, Page 171: R4 (15 points)

For a P2P file-sharing application, do you agree with the statement, “There is no notion of client and server sides of a communication session”? Why or why not?

4. Chapter 2, Page 171: R5 (15 points)

What information is used by a process running on one host to identify a process running on another host?

5. Chapter 2, Page 171: R6 (15 points)

Suppose you wanted to do a transaction from a remote client to a server as fast as possible. Would you use UDP or TCP? Why?

6. Chapter 2, Page 173: P1 (25 points)

True or false?

- a. A user requests a Web page that consists of some text and three images. For this page, the client will send one request message and receive four response messages.
- b. Two distinct Web pages (for example, [www.mit.edu/research.html](http://www.mit.edu/research.html) and [www.mit.edu/students.html](http://www.mit.edu/students.html)) can be sent over the same persistent connection.

- c. With nonpersistent connections between browser and origin server, it is possible for a single TCP segment to carry two distinct HTTP request messages.
- d. The Date : header in the HTTP response message indicates when the object in the response was last modified.
- e. HTTP response messages never have an empty message body.