HW 2 Solutions-Chapter 2

Notes: The problem P1 could be picked up for grading. Note that the P1-e, if your answer is "False", you will get full points (6 points); if your answer is "True" with explanation on 404 Not Found, you will also get full points (6 points); but if your answer is "True" without any explanation, you will get half of the full points (3 points).

AR3. The process which initiates the communication is the client; the process that waits to be contacted is the server.

AR4. No. In a P2P file-sharing application, the peer that is receiving a file is typically the client and the peer that is sending the file is typically the server.

AR5. The IP address of the destination host and the port number of the socket in the destination process.

AR6. You would use UDP. With UDP, the transaction can be completed in one roundtrip time (RTT) - the client sends the transaction request into a UDP socket, and the server sends the reply back to the client's UDP socket. With TCP, a minimum of two RTTs are needed - one to set-up the TCP connection, and another for the client to send the request, and for the server to send back the reply.

AR11. The applications associated with those protocols require that all application data be received in the correct order and without gaps. TCP provides this service whereas UDP does not.

AR12. When the user first visits the site, the server creates a unique identification number, creates an entry in its back-end database, and returns this identification number as a cookie number. This cookie number is stored on the user's host and is managed by the browser. During each subsequent visit (and purchase), the browser sends the cookie number back to the site. Thus the site knows when this user (more precisely, this browser) is visiting the site.

AR16. The message is first sent from Alice's host to her mail server over HTTP. Alice's mail server then sends the message to Bob's mail server over SMTP. Bob then transfers the message from his mail server to his host over POP3.

AP1.
a) This statement is false. The client would receive a response for each request so if it sent a request then it would get a response of the same amount. So if it send three requests it would get three responses and so on.

b) This is true. The book says "Moreover, multiple web pages residing on the same server can be sent from the sever to the same client over a single persistent TCP connection." This suggestion that both web pages are from the MIT and are probably on the same server.

c) This statement is false. A non-persistent connection would handle each web page in a separate connection. So each separate connection needs a new request. This has some draw backs since each new connection can take longer to respond.

d) This statement is false. The "Date:" is the time at which the request was created and not when the object was last modified.

e) This statement is false. Some HTTP response messages have an empty message body. For example, HTTP Status-Code of 204 and 304 MUST NOT include a message body. (RFC 2616). However, if your answer is "Ture", you need to explain that if the response fails then an error message would be returned, and a 404 Not Founds response would occur if it wasn't found so it's not possible for a reply to be empty.