Worksheet 4

1. What transport layer protocol is used to support HTTP, FTP, SMTP, and POP3? Why?

2. Describe how Web caching can reduce the delay in receiving a requested object. Will Web Caching reduce the delay for all objects requested by a user or for only some of the objects? Why?

3. Institutional cache hit rate: 0.3, the response time for a hit request is 10 milliseconds; the response time for a miss request is 1 second. What is the average response time for a request?

4. Alice using a Web-based email account sends a message to Bob who access his mail from a mail server using POP3. Describe how the message gets from Alice's host to Bob's host. Indicate application-layer protocol in each step.

5. What is the main purpose of DNS? Is DNS centralized? Will a root DNS be accessed for each hostname-to-IP translation? Why?