**CS 428/528**

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**Quiz 2**

1. What is the primary function of DNS? **(1 point)**

The translation of URLs into IP addresses and vice-versa.

2. Cookies can be used by a website to store shopping cart information. True or False? **(1 point)**

True

3. What is the difference between persistent and non-persistent HTTP connections? **(1 point)**

Persistent connections “stay alive,” i.e. the server continues transmitting information to the client indefinitely. A non-persistent connection terminates after the client has received the requested information.

4. What are the port numbers used by the server and client in an HTTP connection? **(2 points)**

Port 443

5. Which of these network applications is not time sensitive (there could be multiple correct options)? **(1 point)**

a) E-mail b) Video Streaming c) Internet telephony (e.g., skype) d) Web Documents

All of these are time sensitive to some degree, but D is the least time sensitive of the four.

6. Two hosts A and B are connected by a 10 Mbps link and the distance between then is 300 Km. A is sending a packet of size 1000 KB to B. What is transmission delay and propagation delay for the packet? Speed of propagation is 3\*108 m/sec. **(2 points)**

Dt = 1e6B/1e7(B/s) = 0.1s

Dp = (3e2 m)/(3e8 m/s) = 1e-6s

7. Consider the scenario shown below, with four different servers connected to four different clients over four three-hop paths. The four pairs share a common middle hop with a transmission capacity of R = 300 Mbps. The four links from the servers to the shared link have a transmission capacity of RS = 90 Mbps. Each of the four links from the shared middle link to a client has a transmission capacity of RC = 40 Mbps per second. What is the maximum achievable end-end throughput (in Mbps) for each of four client-to-server pairs, assuming that the middle link is fair-shared (i.e., divides its transmission rate equally among the four pairs). Which link is the bottleneck link for each session? **(2 points)**

Maximum throughput is 40Mbps/pair, the bottleneck is the client connection but if raised sufficiently the bottleneck would become the shared link.

