0907422 Computer Networks (Fall 2009)
Quiz 1

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Instructions: Time **10** minutes. Closed books and notes. No calculators. **No questions are allowed**.

Q1. List six access technologies. Classify each one as residential access, company access, or mobile access.

No	Technology	Residential	Company	Mobile
1	**Dial-up modem over telephone line**	**X**		
2	**DSL over telephone line**	**X**	**X**	
3	**Cable to HFC**	**X**		
4	**100 Mbps Switched Ethernet**		**X**	
5	**Wireless LAN**			**X**
6	**Cellular mobile access**			**X**

Q2. How long does it take a packet of length 1,000 bytes to propagate over a link of distance 2,500 km, propagation speed 2.5×10^8 m/s, and transmission rate 2 Mbps?

Transmission delay = L/R = 8 bits/byte * 1,000 bytes / 2,000,000 bps = 4 ms

Propagation delay = d/s = 2,500 / 2.5×10^5 = 10 ms

Total Time = 4 + 10 = 14 ms

Q3. What are the five layers in the Internet protocol stack?

1. Application Layer   **4. Link Layer**

2. Transport Layer   **5. Physical Layer**

3. Network Layer

Q5. From a user's perspective, what is the difference between the download-and-delete mode and the download-and-keep mode in POP3?

With download and delete, after a user retrieves its messages from a POP server, the messages are deleted. This poses a problem for the nomadic user, who may want to access the messages from many different machines (office PC, home PC, etc.). In the download and keep configuration, messages are not deleted after the user retrieves the messages. This can also be inconvenient, as each time the user retrieves the stored messages from a new machine, all of non-deleted messages will be transferred to the new machine (including very old messages).

<Good Luck>