

CS 640, Spring 2016 - Sample Quiz

1. Draw a picture of the reply packet sent by a web server. Label each header with the name of the protocol it's associated with (acronyms are okay). For each header, describe at least two pieces of important information it contains. (3 points)

2. How do protocols operating at the transport layer identify the specific remote process with which a client wants to communicate? (1 point)

3. What is one advantage of circuit switching? What is one advantage of packet switching? (1 point)

4. Draw the *Non-Return to Zero* (NRZ) and *Manchester* encodings for the sequence *1110001010*. (2 points)

 1 1 1 0 0 0 1 0 1 0	 1 1 1 0 0 0 1 0 1 0
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(a) Non-Return to Zero (NRZ)

(b) Manchester

5. Consider two hosts that are 4000km apart and connected by a series of fiber optic links whose bandwidth is 80Mbps. Recall that light travels through optical fiber at a speed of 2×10^8 m/s. What is the *one way latency* for for a 1000 Byte packet assuming there is 25ms of queueing delay? (2 points)

6. (a) What is the *hidden terminal* problem in wireless networks? (1 point)

- (b) How is it addressed by Carrier Sense Multiple Access/Collision Avoidance (CSMA/CA)? (1 point)

7. What is one reason that statistical multiplexing is better than time division multiplexing (TDM)? (1 point)