SIMON FRASER UNIVERSITY
SCHOOL OF ENGINEERING SCIENCE

Spring 2009
ENSC 427: COMMUNICATION NETWORKS

Quiz No. 2
Thursday, March 26, 2009
Duration: 50 minutes. Attempt all questions. Please provide brief and concise answers.
Questions are equally weighted. Closed book and closed notes. Calculators, PDAs, laptops,
and wireless phones are not permitted.

1.
   - List multiplexing techniques in circuit-switching networks.
   - Briefly describe each technique.

2.
   - What is SONET?
   - Show examples of SONET network topologies and list main elements of a SONET network.

3.
   - List types of circuit switches and provide an example for each switch type.
   - Draw a high-level system diagram for each example.

4.
   - What are ARQ protocols and why are they used?
   - Using diagrams, describe the main stages of the Stop-and-Wait and basic Go-back-N protocols.

5.
   - What is flow control and how is it accomplished using the TCP protocol?
   - What is RTT and how is it estimated by the TCP protocol?

6.
   - What is LLC and what are its main functions?
   - What is CRC and where is it used?

7.
   - Describe the M/M/1 queue, show the system diagram, and list its main parameters.
   - List objects in the OPNET Node Editor needed to create the M/M/1 queue and list the statistics that you collected in the OPNET M/M/1 queue tutorial.