

**KFUPM - COMPUTER ENGINEERING DEPARTMENT****COE-540 – Computer Networks****Quiz 02 – Due Sunday October 31<sup>st</sup>, 2010****Student Name:****Student Number:**

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**Problem 1: (20 points)** It is desired to DESIGN a communication link from Qaurayyat (A) to Riyadh (B) and from Riyadh (B) to Dammam (C). The figure below shows three nodes: A, B, and C connected using two links. If link AB operates sliding window protocol with  $W = 7$ , while the link BC uses  $W = 3$ . Ignore acknowledgments and processing time.

a) Calculate the efficiency, and throughput (in bits per second and frames per second) of link AB.

b) The operator needs to design the transmission bit rate on link BC. Specify the minimum bit rate needed on link BC such that buffers at node B do not overflow.

