

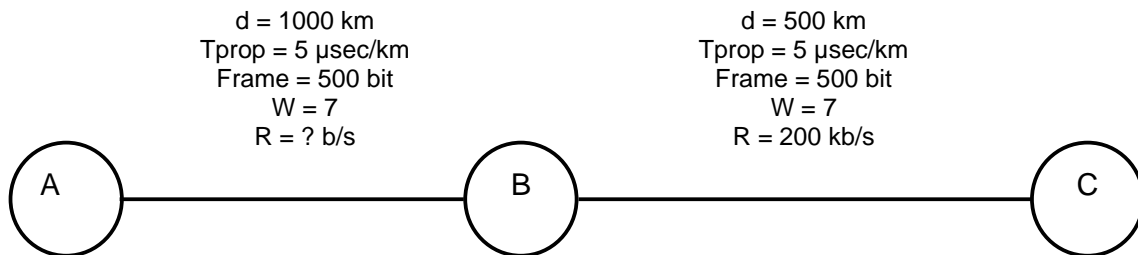
KFUPM - COMPUTER ENGINEERING DEPARTMENT**COE-341 – Data and Computer Communication – TAKE HOME Quiz****Due Date/Time:** Tuesday Dec 5th, 2006 - 10:00 am (class time)**Student Name:****Student Number:**

Problem: 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 links AB and BC both operate sliding window control protocols with $W = 7$.

a) (100 point) What is the maximum data rate, R_{AB} , for link Qurayyat-Riyadh such that the receive buffer at Riyadh node does NOT overflow.

Assume: all links operate full-duplex lines and error free channels. Furthermore, ACK frames are separate frames of 100 bits in length and the processing time for data or acknowledgment frames require 0.5 milliseconds each.

b) (50 point) Repeat the problem assuming the link bit rate from Riyadh to Dammam is 400 kb/s



Solution: