King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 341 – Data & Computer Communications (T111)

Homework # 04 (*due date: Sunday 18/12/2011 during class period*)

***** Show all your work. No credit will be given if work is not shown! *****

(100 points): In the figure below frames are generated at node A and sent to node C through node B. Determine the maximum processing time that node B can have (i.e., node B's processing time is not ignored) so that the buffers of node B are not flooded, based on the following:

- The data rate between A and B is 200 kbps.
- The data rate between B and C is 250 kbps.
- The propagation delay is 5 μs/km for both lines.
- There are full-duplex lines between the nodes.
- All data frames are 1000 bits long; ACK frames are separate frames of negligible length.
- Between A and B a sliding-window protocol is used with a window size of 9 frames.
- Between B and C a stop-and-wait protocol is used.
- There are no errors.