

**Name:**

**Id#**

**COE 342, Term 003**  
**Data & Computer Communications**

**Quiz# 3**

Date: Saturday, August 11, 2001

Q1. Consider the use of 1000-bit frames on a 1-Mbps satellite channel with a 270 ms delay. Assuming error-free transmission, determine the maximum link utilization for

- i. Stop-and-wait flow control

- ii. Sliding window flow control with a window size of 7.

- iii. Sliding window flow control with a window size of 127.

Q2. A CRC is constructed to generate a 4-bit FCS for an 8-bit message. The generator polynomial is  $X^4 + X^3 + 1$

- i. Draw the linear feedback shift register (LFSR) circuit that would perform this task.

- ii. Determine the FCS that will be generated for the message 10011011.

- iii. Suppose that the receiver receives the following message 110010011001. Will the receiver assume the message faulty or fault-free? Justify your answer.