Assignment # 1

Due date 24 Oct 2022

ERROR DETECTION:

CHECKSUM AND CYCLICAL REDUNDANCY CHECK: CRC

Question # 1 Checksum

Consider the data unit to be transmitted is-

10011001111000100010010010000100

Consider 8 bit checksum is used.

<ins>At sender side</ins>

Show the checksum and the complete data transmitted from the sender and all the steps performed to get the final data transmitted.

<ins>At receiver side</ins>

Proof that the data at the receiver arrived correctly and there is no damage to the data transmitted.

Question # 2 Cyclical redundancy check

Suppose we want to transmit a message 11001001 and protect it from error using the CRC polynomial x^3+1. Use polynomial long division to determine the message that should be transmitted (show all steps to get CRC bits and the complete message transmitted).

Corrupt the left-most third bit of the transmitted message and show that the error is detected by the receiver using the CRC technique.