COMPUTER NETWORK

ASSIGNMENT 1

1. What are the number of cables reqired for n devices connected in mesh, ring, bus and star topology?
2. It is required to transmit data at a rate 64 kbps channelover a 3khz channel. What is the minmum SNR required to accomplish this?
3. Given a 10 bit sequence 1010011110 and a devisior of 1011. Find the CRC. Check your answer.
4. How can you compare pure ALOHA and slotted ALOHA?
5. If a binary signal is sent over a 3Khz channel. Whose signal to noise ratio is 20db. What is the maximum achievable data rate?

ASSIGNMENT 2

1. What is the meaning of 10Base-T?
2. What is the difference between TCP/IP model and the OSI model?
3. Consider the following message M = 1010001101. What is The cyclic redundancy check (CRC) for this message using the divisor polynomial $x5 + x4 + x2 + 1$?
4. A computer network uses polynomial over GF(2) for error checking with 8 bits as information bits and uses $x3 + x + 1$ as the generator polynomial to generate the check bits. In this network, the message 01011011 is transmitted as?
5. Test if these code words are correct, assuming they were created using an even parity Hamming Code . If one is incorrect, indicate what the correct code word should have been. Also, indicate what the original data was.
   010101100011
   111110001100
   000010001010

ASSIGNMENT 3

1. Consider the data unit to be transmitted is-
   10011001111000100010010010000100
   Consider 8 bit checksum is used. Show the procedure.
2. What is the difference between network layer delivery and the transport layer delivery?
3. Discuss the mode for propagating light along optical channels.
4. Discuss the major functions performed by the Presentation layer and Application layer of the ISO - OSI model.
5. In the Hamming code, for a data unit of 'm' bits how do you compute the number of redundant bits 'r' needed?