Module – 2

1. Define cyclic code. Find the codeword c(x), using CRC for the information 1101 with generator 1100. 6Marks
2. Explain the working of Stop and Wait Protocols 6Marks
3. Explain Flow control Mechanism? 6M
4. What is the Hamming distance for each of the following codewords? d (10000, 00000) , d (00000, 11111) ,d (10101, 10000) ,d (00000, 00000)
5. Assuming even parity, find the parity bit for each of the following data units. a. 1001011 b. 0001100 c. 1000000 d. 1110111
6. Given the dataword 101001111 and the divisor 10111, show the generation of the CRC codeword at the sender site (using binary division).
7. In CRC, if the dataword is 5 bits and the codeword is 8 bits, how many 0s need to be added to the dataword to make the dividend? What is the size of the remainder? What is the size of the divisor?
8. What is the minimum Hamming distance?
9. If we want to be able to detect 2-bit errors, what should be the minimum Hamming distance?
10. In a block code, a dataword is 20 bits and the corresponding codeword is 25 bits. What are the values of k, r, and n according to the definitions in the text? How many redundant bits are added to each dataword?
11. How does a single-bit error differ from a burst error?
12. What is the definition of a linear block code?
13. A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1. What is the actual bit string transmitted?
14. A bit stream 10011101 is transmitted using the standard CRC method. The generator polynomial is x^3+1.
    What is the actual bit string transmitted?
    Suppose the third bit from the left is inverted during transmission. How will receiver detect this error?