**Aim:**  you are assumed to implement huffman encoding and decoding procedures.

**Question 1:**

For the given input below, implement a C++ program that will use Huffman’s algorithm to construct an optimal binary prefix code. You should put comments in your code and show the procedure of the usage of the priority queue.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Letter | : | A | B | I | M | S | X | Z |
| Frequency | : | 12 | 7 | 18 | 10 | 9 | 5 | 2 |

**Question 2:**

For this question, implement a C++ code that will decode each bit string using the binary code in the first question.

* 1. 01100010101010
  2. 1000100001010
  3. 11100100111101
  4. 1000010011100