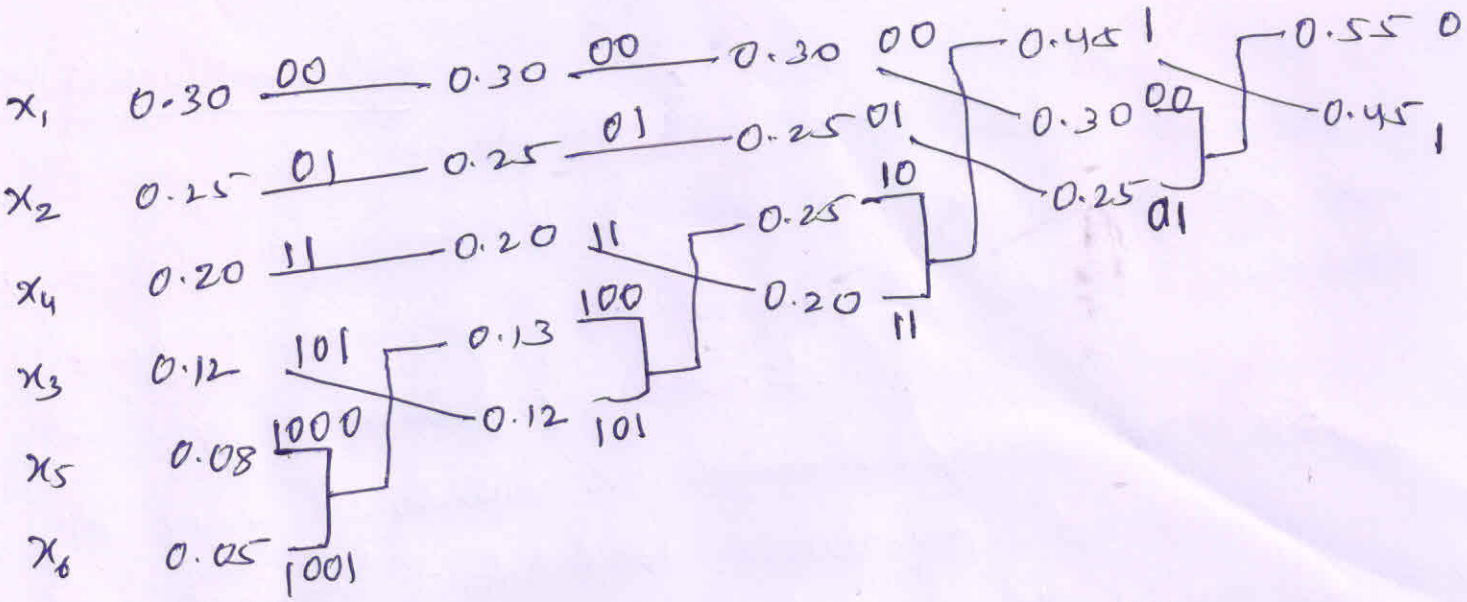
Huffman Encoding

1. List the source symbol in order of decreasing probability
2. Combine the probabilities of the two symbol having the lowest probabilities and reorder the resultant probabilities, this step is called reduction 1.
3. the same prodedure is repeated until there are two ordered probabilities remaining.
4. Start Encoding with the last reduction, which consist of exactly two ordered probabilities. Assign 0 as the first digit in the code words for all the symbols associate with the first probabilities, assign 1 to the second probability.
5. Now go back and assign 0 and 1 to the second digit for the two probabilities that were combined in the previous reduction step. retaining all assignment made in step 4.
6. Keep regressing this way until the first colums is reached.



$H(X) = 2.36$ bit/symbol

$L = 2.38$ bit/symbol

$\eta = 99\%$