SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECB301 – ANALOG AND DIGITAL COMMUNICATION

III B.E. ECE / V SEMESTER

UNIT 5 – INFORMATION THEORY AND ERROR CONTROL CODING

TOPIC – HUFFMAN CODING

HUFFMAN CODING

- The most popular technique for removing coding redundancy is due to Huffman (1952)
- When coding the symbols of an information source individually, Huffman coding yields the smallest possible number of code symbols per source symbol
- In terms of the noiseless coding theorem, the resulting code is optimal for a fixed value of n, subject to the constraint that the source symbols be coded one at a time

HUFFMAN CODING

The first step in Huffman's approach is

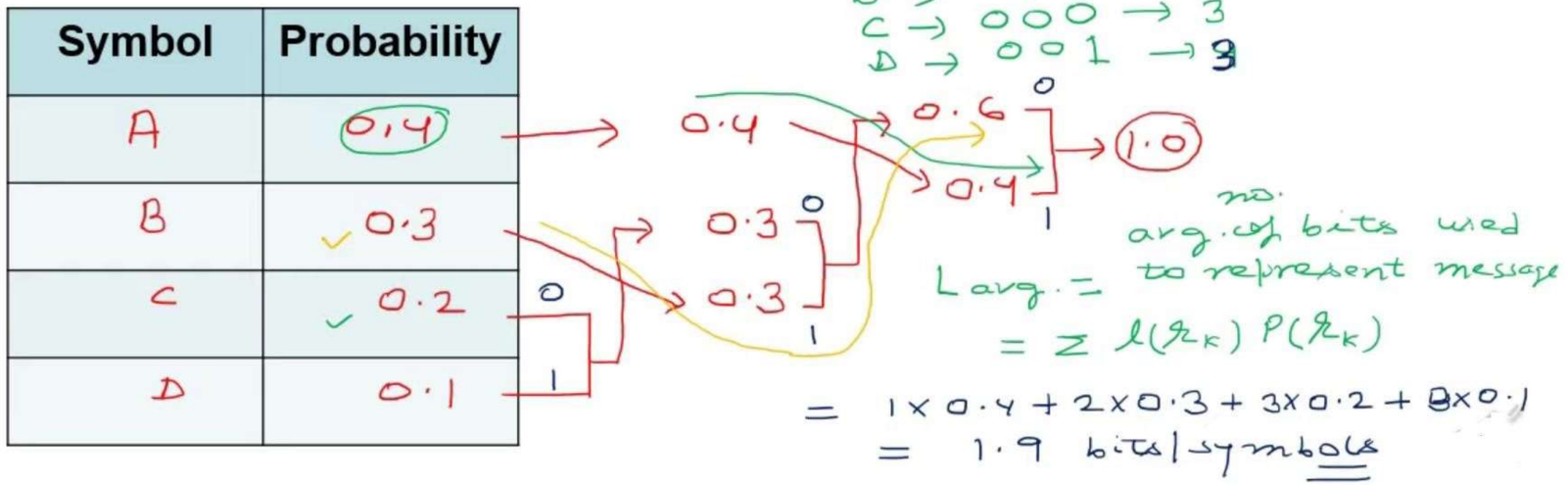
- To create a series of source reductions by ordering the probabilities of the symbols under consideration
- Combining the lowest probability symbols into a single symbol that replaces them in the next source reduction

Huffman Coding

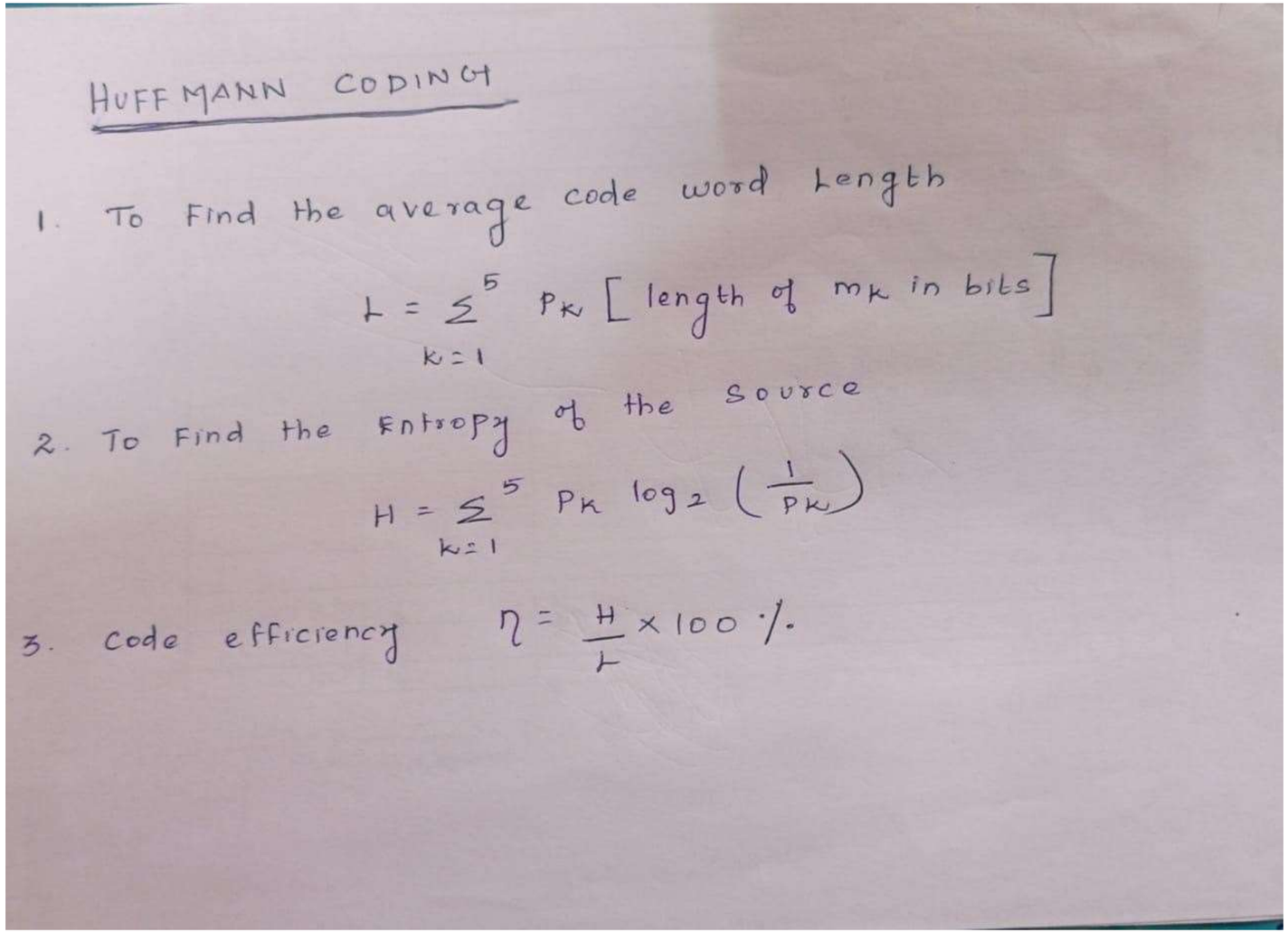
Example: Calculate the Huffman Codes for the set of symbols as shown in table.

Symbols	A	B	C	D
Probability	0.4	0.3	0.2	0.1

Solution:



HUFFMAN CODING



Thank you!