

Quiz-4b(A&B): Design and Analysis of Algorithms (Spring-2024)

SOLUTION

Symbol	Frequency
A	24
B	12
C	10
D	8
E	8

----> total 186 bit
(with 3 bit per code word)

The two rarest symbols 'E' and 'D' are connected first, followed by 'C' and 'D'. The new parent nodes have the frequency 16 and 22 respectively and are brought together in the next step. The resulting node and the remaining symbol 'A' are subordinated to the root node that is created in a final step.

Code Tree according to Huffman

Symbol	Frequency	Code	Code Length	total Length
A	24	0	1	24
B	12	100	3	36
C	10	101	3	30
D	8	110	3	24
E	8	111	3	24

ges. 186 bit
(3 bit code)

tot. 138 bit