

10/10

BRAC UNIVERSITY
 Department of Computer Science and Engineering
CSE221: Algorithms

Examination: Quiz
 Duration: 20 minutes

Semester: Fall 2022
 Total Marks: 20

Name: <u>Shahed Pervez Nokib</u>	ID: <u>20301123</u>	SECTION: <u>10</u>
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1. Suppose you want to send this string "CBBBAAADDDDDSEFFFFFEEDDF" to your friend.
- What are the frequencies of the characters in the given string?
 - Encode the string using the Huffman encoding algorithm and generate the Huffman tree.
 - Decode "0110001000000" and find out the characters.

<u>Chr</u>	<u>Freq</u>		<u>Chr</u>	<u>Freq</u>
✓ C	- 1		✓ D	- 6
✓ B	- 3		✓ S	- 1
✓ A	- 3		✓ E	- 4

✓ F - 5

Priority Queue

C	S	A	B	E	F	D
1	1	3	3	4	5	6

⇒

2 ^ C S	A 3	B 3	E 4	F 5	D 6
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⇒

B 3	E 4	F 5	5 ^ 2 A	D 6
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⇒

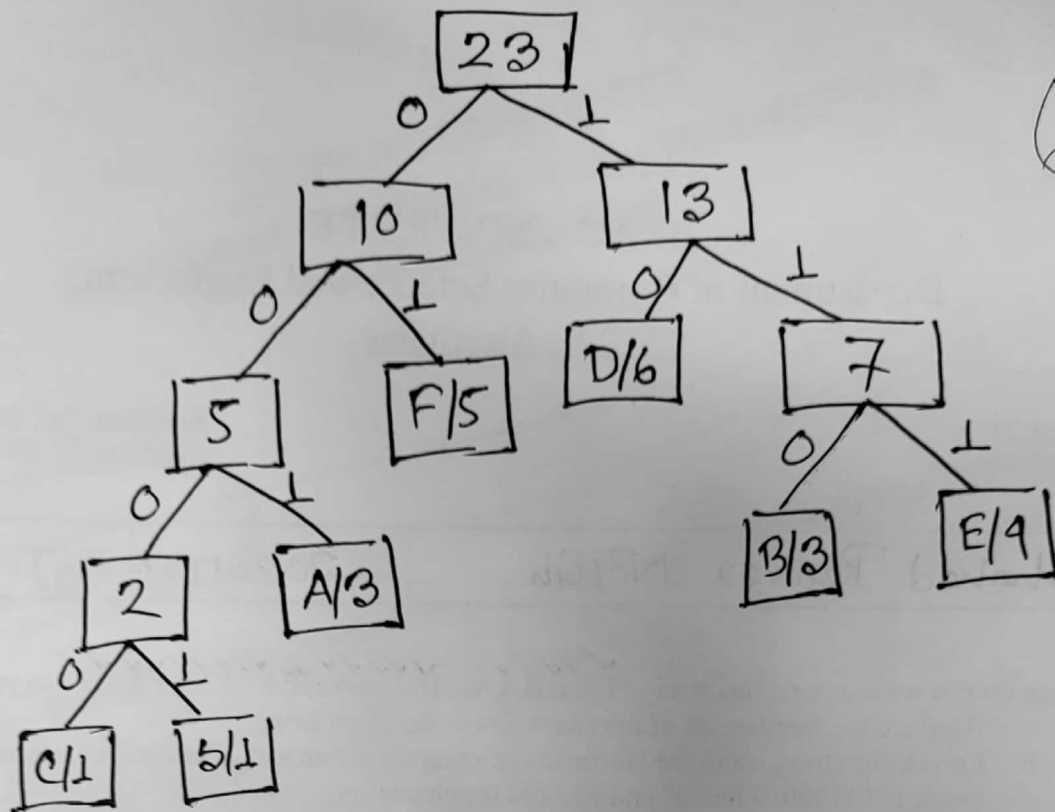
F 5	5 ^ 2 A	D 6	7 ^ B E
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⇒

D 6	7 ^ B E	10 ^ 5 F
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⇒

10 ^ 5 F	13 ^ D 7
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$C = 0000$ $b = 0001$ $A = 001$ $B = 110$ $E = 11$

$F = 01$ $D = 10$

C Decode \Rightarrow 0110001000000001
 F D A C A