

Note: Attempt all questions. All subparts should be together

1	<p>Write Complete Algorithms for the following. Use proper documentation/Comments. It should contain all the ingredients required so that it can be easily converted to a high level language.</p> <ul style="list-style-type: none"><li>a) Huffman Compression for compressing the files using prefix free code</li><li>b) Counting Sort with stable property</li><li>c) Insertion in a Doubly Link List</li><li>d) Deletion in a Binary Search Tree</li></ul>	2.5*4
2	<ul style="list-style-type: none"><li>a) How the time complexity of various operations in a data structure plays a key role in the selection of the data structure. Discuss few examples to prove your point.</li><li>b) Make a complete case after giving all the possible parameters, pros and cons "Given a problem how you will select a particular sorting algorithm to be used for solving that problem"</li></ul>	2.5*2
3	<ul style="list-style-type: none"><li>a) Rotation in the AVL trees does not impact the overall complexity of the Insertion and Deletion operations. Prove with the help of complexity analysis and give example.</li><li>b) Discuss the following data structures in brief with examples<ul style="list-style-type: none"><li>i. Compressed Trie</li><li>ii. Suffixed Trie</li><li>iii. Encoding Trie</li></ul></li></ul>	2.5*2