**Data Structure and Algorithm**

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| **Qn. No.** | **Questions** |
|  | Explain Symbol table in detail |
|  | Explain Optimal Binary search tree with example |
|  | Explain AVL tree with example |
|  | Explain splay tree with example |
|  | Explain the steps to build a B- tree of order 5 for the following data: 78, 21, 14,11,97, 85, 74,63, 45, 42, 57, 20,16, 19,32,30,31 |
|  | Create a 3 ways B- tree by inserting the following data one at a time: 5, 3, 21,9, 1, 13, 2,7,10,12,4,8. |
|  | Draw max heap. Draw heap formed from: 40, 80, 35, 90, 45, 50, 70. |
|  | Create the min-heap for the given data: 25, 12,27, 30,5,10, 17,29,40,3 |
|  | Show the result of inserting 10,12, 1,14,6,5,8,15,3,9,7,4,13 and 2 one at a time, into empty binary heap. After creating such heap delete the element 8 from heap, how do you repair the heap? |
|  | Explain graph coloring problem with example |
|  | Explain dijkstra's algorithm with example |
|  | Explain adjacency list, adjacency matrix, adjacency multi list and inverse adjacency list with example |
|  | explain breadth first search and depth first search algorithm with example |
|  | Define sequential file organization and state its advantages and disadvantages. |
|  | ExExplain the various modes of opening the file in C or C++. |
|  | Explain the various modes of opening the file in C or C++. |
|  | Explain advantages of indexing over sequential file. |
|  | Explain any three operations carried out on sequential files. |