

# Question bank for Data structures Python

## UNIT 1

1. Write about types of Inheritance with example.
2. Write about Polymorphism with functions and objects

## UNIT 2

1. Explain List, Tuples, Set, Dictionaries.?
2. Explain Comprehensions and its Types,
3. Explain Strings functions with an example.

## UNIT 3

1. What is Binary search? Write a Program to implement it? What are the applications of binary search? (Diagrammatic representation is needed)
2. What is linear search? Write a Program to implement it? Differentiate between Binary and linear search. (Diagrammatic representation is needed)
3. Explain Merge sort ? Sort the following elements using merge sort. Below is example for Your reference 45 ,23 ,20 ,50, 70, 24, 33, 43, 47. (Diagrammatic representation is needed) Write a C++ program to implement Merge sort
4. Explain Quick sort ? Sort the following elements using merge sort. Below is example for Your reference 45 ,23 ,20 ,50, 70, 24, 33, 43, 47(Diagrammatic representation is needed) Write a C++ program to implement Quick sort
5. Explain in detail about BFS and DFS with examples?
6. Explain Heap sort ? Sort the following elements using merge sort Below is example for Your reference .45 ,23 ,20 ,50, 70, 24, 33, 43, 47 (Diagrammatic representation is needed) Write a C++ program to implement Heap sort .

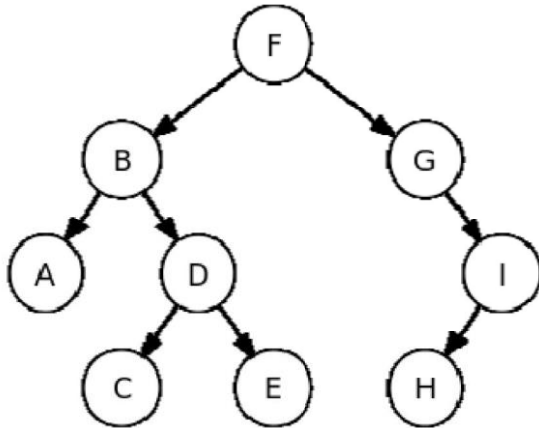
## UNIT 4

1. What is a linked list? Explain Single linked list and various operations on it. Write a program to implement **insert front** and **delete end** operations.(Diagrammatic representation is needed)
2. Explain Doubly linked list and various operations on it. Write a program to implement **insert end** and **delete front** operations (Diagrammatic representation is needed)
3. Explain Circular linked list and various operations on it. Write a program to implement **insert front** and **delete front** operations (Diagrammatic representation is needed)
4. What are Data structures? Explain Linear data structures and Non Linear data types with example (Diagrammatic representation is needed)

## UNIT 5

1. Explain about Directed vs Undirected Graphs.
2. Explain BFS & DFS with example.
- 3.a) Explain Binary tree .Explain various traversals

b) Write down tree traversals for the following binary tree(Below is example for Your reference )



2. What do you mean by AVL tree? Construct an AVL tree by inserting the following elements in the order of their occurrence H, I, J, B, A, E, C, F, D, G, K, L, L, .
3. (a) Define binary search tree? What are the properties of binary search tree.  
(b) Insert items with the following keys into an initially empty binary search tree: 30, 40, 24, 58, 48, 26, 11, 13. Draw the tree after each insertion.  
c) Delete the following elements from the constructed tree 58, 11, 30 and re draw the tree after each deletion.
4. Construct a binary tree for the given: In-order traversal = Q, A, Z, Y, P, C, X, B. Pre-order traversal = Z, A, Q, P, Y, X, C, B. Write the post order traversal for the created binary tree.