

2008

8. Explain the various types of searching techniques. Write an algorithm with analysis steps for linear search and binary search.

Time : 3 Hours

Full Marks :75

9. Explain the characteristics of the performance of a sorting algorithm, describe quick sort algorithm.

Candidate are required to give their answers in their own words as far as practicable.

Answer any **Five** questions.

Question no.1 is compulsory

10. Write a program in C language to implement stack with 2 dimensional arrays. Perform push () and pop () operation.

All Questions have equal marks.

Q.1 Answer the following:-

- a) What is a data structure? Explain its three components..
- b) Define abstract data type (ADT)? Discuss the properties of ADT?

[1]

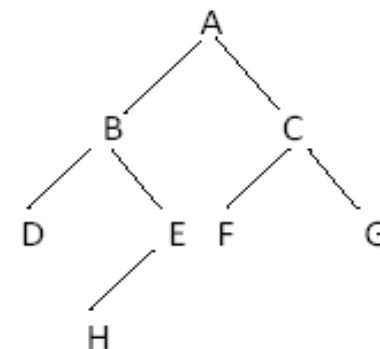
[Turn-over]

[2]

- c) What are the different data types available in C language? Explain with example.
 - d) Explain algorithm and its types? Distinguish between a class and a structure.
 - e) Define tree. Discuss its usage in different application and also describe binary tree
2. Explain stack mechanism? What do you mean by stack overflow and stack underflow? Distinguish between static and dynamic implementation of stack.
3. Explain the different types of queue? How is implementation of queue done? What are the limitations of simple queue? Explain the insertion and deletion operations of queue.
4. Discuss the linked list with its operation? explain the operation of insert and delete a node from the doubly linked list.

[3]

5. Define a binary tree? Discuss its properties, what are the differences between trees and a graph?
6. Explain the types of algorithms for tree traversal. List and describe the various operations on binary tree using linked list representation.
7. Give the in-order, pre-order, post-order traversal for the following tree.



[Turn-over]