

2008

TIME : 3 Hours

Full Marks : 75

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

Answer any Five questions.

Q.1 . is compulsory

All Questions have equal marks.

Q1. Answer the following questions

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

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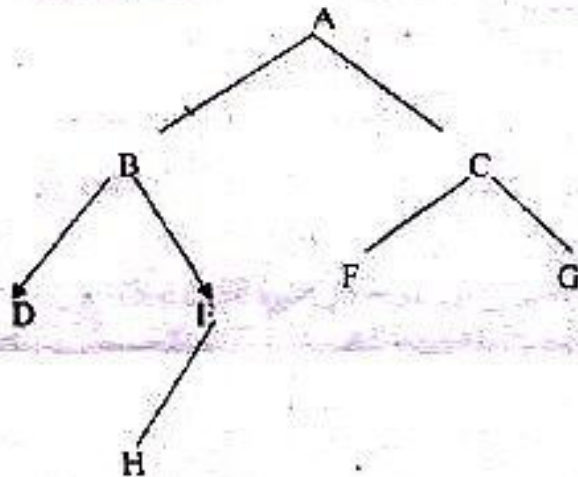
B.A - II Paper - IV

- What are the different data types available in c language? Explain with examples.
 - Explain algorithm and its types? Distinguish between a structure and a class.
 - Define trees. Discuss it's usage in different application. And describe binary tree.
- Q2. Explain stack mechanism? What do you mean by stack overflow and stack underflow? Distinguish between static and dynamic implementation of stack.
- Q3. Explain the different types of queues? How is implementation of queue done? What are the limitations of simple queue? Explain the insertion and deletion operations of queue.
- Q4. Discuss the linked list with it's operation? Explain the operation of insert and delete a node from the doubly linked list.

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- Q5. Define a binary tree? Discuss its properties, what are the differences between trees and a graph?
- Q6. Explain the types of algorithms for tree traversal. List and describe the various operations on binary tree using linked representation.
- Q7. Give the inorder, pre-order, post-order and breadth first traversal for the following tree.



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- Q8. Explain the various types of searching techniques. Write an algorithm with analysis steps for linear search and binary search.
- Q9. Explain the characteristics of the performance of a sorting algorithm. Describe quick sort algorithm
- Q10. Write a program in c-language to implement stack with 2-Dimensional array. Perform the push () and pop () operations.