**2008 Alagappa University M.Sc Computer Science DATA STRUCTURES USING C++ Question paper**

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SECTION A — (10 x 3 = 30 marks)  
Answer ALL questions.  
  
1. Write a note on ‘Arrays as parameters’.  
2. Define the following in C++  
(a) Class  
(b) Object  
(c) Methods.  
3. Write note on stack operations.  
4. Define queue. Give example.  
5. Give an example of node insertion and deletion in a linear linked list.  
6. Give the advantage of doubly linked list over circularly linked list.  
7. What is a binary tree? Give example.  
8. Define the steps for preorder traversal.  
9. Give the notations for polynomial and exponential order.  
10. Write the steps for quick sort algorithm with an example.  
  
SECTION B — (4 x 10 = 40 marks)  
Answer any FOUR questions.  
  
11. How are multidimensional arrays implemented? Explain with an example.  
12. Write a routine for infix to postfix conversion of an expression.  
13. How is a queue implemented as ADT? Explain.  
14. Explain with examples the operations involved in constructing a tree.  
15. Discuss efficiency of sorting.  
16. Discuss the selection sort with suitable example.  
SECTION C — (2 ? 15 = 30 marks)  
Answer any TWO questions.  
17. Explain in detail implementing the methods of RATIONAL class.  
18. With suitable C++ code discuss the operations and applications of binary trees.  
19. Discuss in detail binary searching. Give suitable examples and code.