



MS – 648

- 15 -

II Semester B.C.A. Degree Examination, May/June 2014  
(Y2K8 Scheme)

Computer Science

3 BCA – BCA 305 : DATA STRUCTURES USING C  
(Non-Equivalent Paper)

(For Both OS/2K7 Scheme Repeaters Students)

(2011-12 & onwards - 70 Marks)

Prior to 2011-12 - 60 Marks)

Time : 3 Hours

Max. Marks : 60/70

**Instructions :** 1) Answer Sections A, B, C.

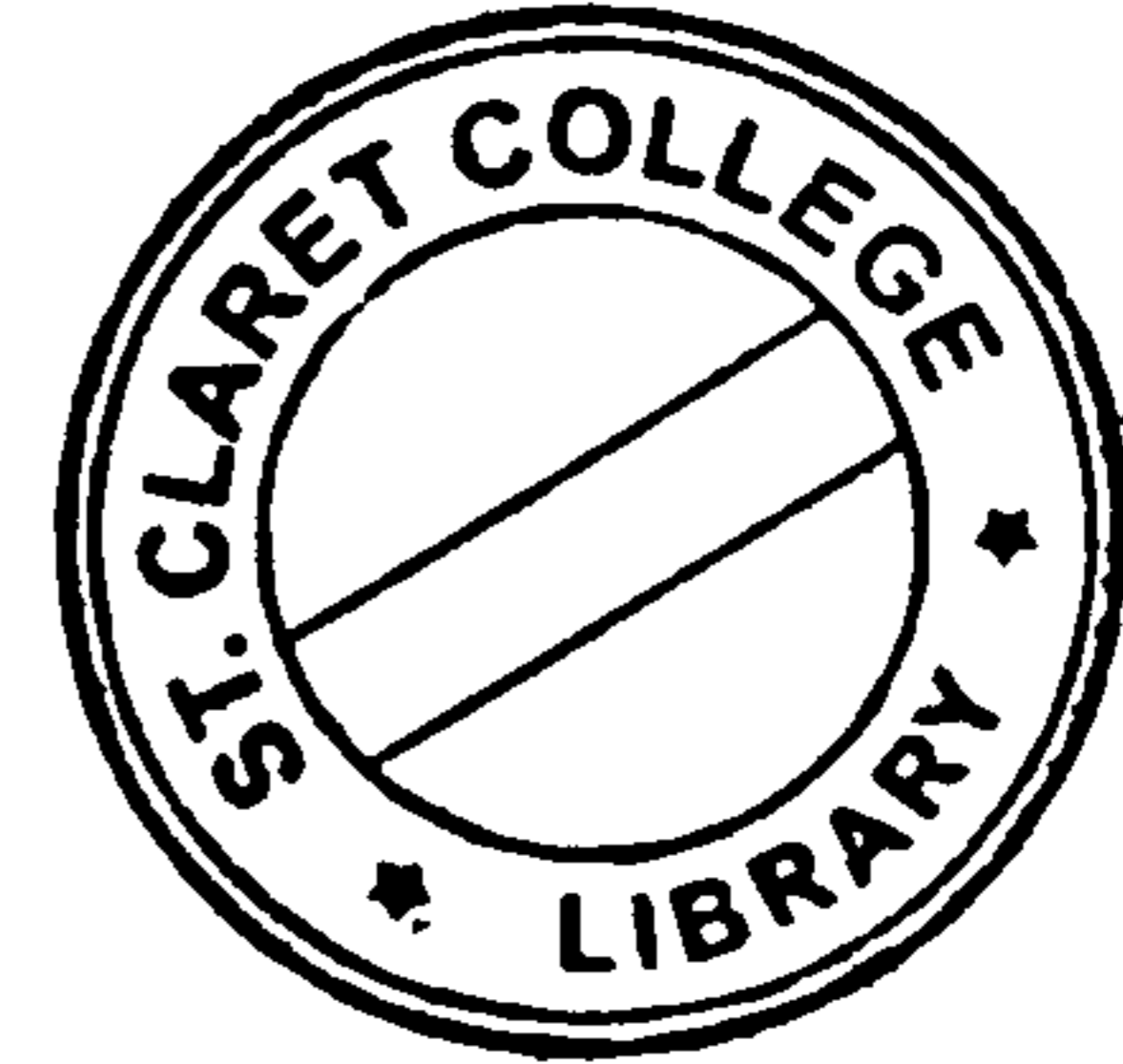
2) Candidate who has taken admission in 2011 onwards must attend Section D.

SECTION – A

Answer **any ten** questions.

(1×10=10)

1. Define Data Structure.
2. Mention the various Data structure operations performed on non-primitive Data Structures ?
3. What is circular queue ?
4. What is an array ?
5. What is Stack overflow ?
6. Write one disadvantage of linear queue.
7. What is a header linked list ?
8. What is sorting ?
9. What is double linked list ?
10. Differentiate between General tree and Binary tree.
11. Define Degree of a node.
12. Convert the following infix into prefix expression  $A + B * C$ .



P.T.O.

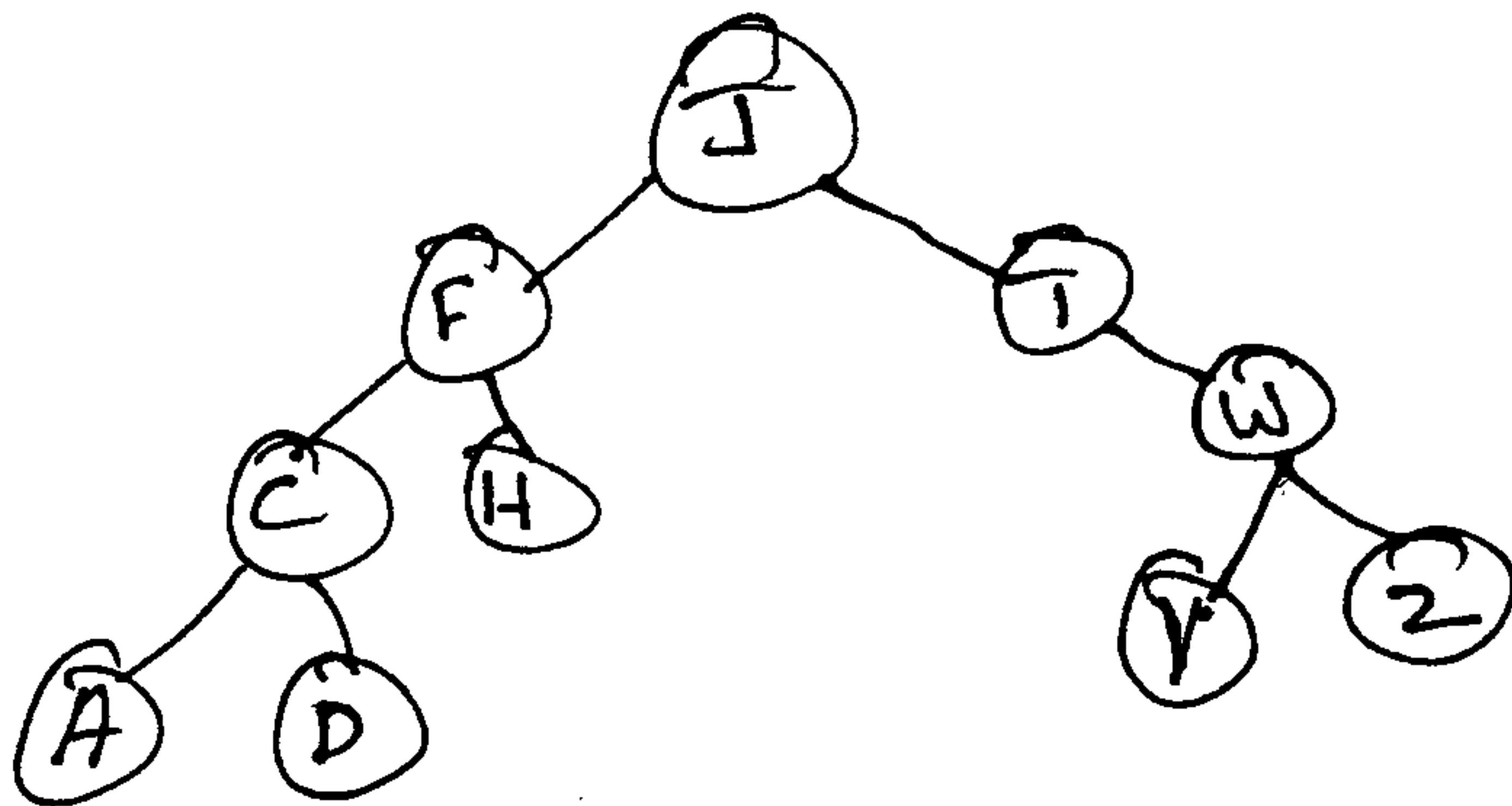


## SECTION – B

Answer **any five** questions.

(3×5=15)

13. Write the applications of data structure.
14. List the advantages of Recursion.
15. Write a recursive function for fabonacci series.
16. What is a deque ? What are the types of deque ?
17. Explain Circularly linked list.
18. List the properties of Binary tree.
19. Traverse the below tree in Pre order, In order and Post order.



## SECTION – C

Answer **any five** questions.

(5×7=35)

20. Explain the classification of data structures.
21. Explain Binary Search Technique. Write an algorithm for Binary Search.
22. Write a C program to sort list of N elements using Bubble Sort Technique.
23. Write short notes on :
  - a) Priority Queue 3
  - b) Malloc ( ) and Calloc ( ). 4



- 24. Write an algorithm to evaluate Postfix expression.
- 25. With a neat diagram, explain the various tree terminologies.
- 26. What is a queue ? What are the different operation in a queue ?
- 27. Given the order of nodes in Pre order and In order. Draw the corresponding binary trees. Also write the post order traversal.

**Pre order :** A B C D G H E F I K J

**In order :** B G H D A E C I K F J

SECTION – D

Answer **any one** question.

**(1×10=10)**

- 28. Write an algorithm to insert and delete a node at the beginning of the linked list and also write the advantages of linked list.
  - 29. Write a C program to perform the operations in circular queue.
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