

**Goa Vidyaprasarak Mandal's  
GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND  
ECONOMICS, PONDA-GOA  
B.C.A (SEMESTER-II) SUPPLEMENTARY EXAMINATION  
MAY/JUNE 2016  
DATA STRUCTURES**

Duration: 2 Hrs

Marks: 50

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INSTRUCTIONS: 1) All questions are compulsory.  
2) Figures to right indicate marks.

- Q.1. Define the following. (5\*2=10)
- i. Data Structure.
  - ii. Almost Complete Binary tree.
  - iii. Circular Linked List .
  - iv. Sorting.
  - v. Queue.
- Q.2.A. State the primitive operations on a binary tree. (2)
- Q.2.B. State and explain Primitive operations on Queues. (3)
- Q.2.C. Write a C program to validate an expression for parenthesis using stack. (5)
- Q.3.A. Why stack is called a pushdown list? (2)
- Q.3.B. Write C implementation for deleteafter(p,x) of Linear Linked List. (3)
- Q.3.C. Write an algorithm to concatenate 2 linked list. (5)
- Q.4.A. What is a balanced tree? (2)
- Q.4.B. Discuss the efficiency of Bubble Sort. (3)
- Q.4.C. Explain Heapsort. (5)
- Q.5.A. Write C implementation for remove(q,x) for queue data structure. (2)
- Q.5.B. Write an algorithm for left rotation on a tree. (3)
- Q.5.C. Implement primitive operations of a graph. (5)

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