

Goa Vidyaprasarak Mandal's
GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND
ECONOMICS, PONDA-GOA
B.C.A (SEMESTER-II) EXAMINATION, APRIL 2018
DATA STRUCTURES

Duration: 2 Hrs

Marks: 50

Instructions: 1. All Questions are compulsory.

2. Figures to the right indicate marks.

Q.1.A. Define the following.

(5*1=5)

- a. Stack data structure
- b. Sorting
- c. Depth of tree
- d. Linear Linked List
- e. Balanced tree

Q.2.B. Fill in the blanks.

(5*1=5)

- a. In a stack, if user try to remove element from the empty stack then it is called as _____.
- b. Expression in which Operator is written after Operand is called as _____.
- c. New nodes are added to the _____ of the queue.
- d. Function _____ is used to dynamically allocate memory.
- e. The first node of a tree is the _____ node.

Q.2.A. Write C representation for operation insert(q) of Queues.

(2)

Q.2.B. Convert the following from infix to prefix and postfix expressions.

(3)

i. $((A+B)*C-(D-E))(F+G)$

ii. $A\$B\C

Q.2.C. Write a C program to evaluate postfix expression using stacks.

(5)

Q.3.A. What is a priority queue?

(2)

Q.3.B. Write C implementation for setleft(p,x) and maketree(x).

(3)

Q.3.C. Write a C program to display Binary tree in ascending order.

(5)

Q.4.A. What is B-tree?

(2)

Q.4.B. Explain Balanced trees.

(3)

Q.4.C. Write C program for bubble sort. Discuss its efficiency.

(5)

Q.5.A. What is a circular doubly linked list?

(2)

Q.5.B. Write an algorithm for right rotation on trees.

(3)

Q.5.C. Explain the concept of graphs.

(5)

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