

Goa Vidyaprasarak Mandal's
Gopal Govind Poy Raiturcar College of Commerce and Economics
Ponda- Goa

B.C.A. (SEMESTER II) EXAMINATION, APRIL 2012
DATA STRUCTURES USING C

Duration: 2 hours

Max. Marks: 50

- Instructions:** (1) All questions are compulsory.
(2) Figures to the right indicate full marks.

Q.1) A) Fill in the blanks: (5)

- i. The average case complexity of Quick Sort is _____.
- ii. The operations performed on _____ are called push and pop.
- iii. _____ Technique is used in Binary search.
- iv. _____ is also known as Partition Exchange sort.
- v. Link field in the last node contains pointer back to the first node, such a list is called _____.

B) Define the following. (5)

1. Big O notation
2. Hashing
3. Queue
4. Data structure
5. Directed Graph

Q.2) Answer the following : (2)

- a) Name four data structures and explain. (3)
- b) Write a program to implement linear search. (3)
- c) Write a program to Add any two matrices (5)

Q.3) a) Explain Stack. (2)

- b) Perform Insertion sort on the following list of element stored in array to sort the array in ascending order. (Show all the stages of insertion sort). (3)

17	9	20	1	95	6	2	77
----	---	----	---	----	---	---	----

....2/-

- c) (i) Write a function to insert elements into a queue. (3)
- (ii) Write A function to insert values in stack. (2)

Q.4. a) Construct a binary search tree for following data. (Show each insertion of data in the tree) (2)

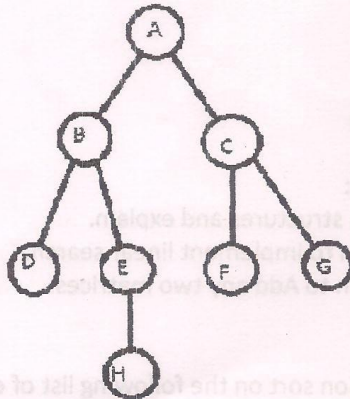
78,98,23,45,12,56,87,34,12

- b) Explain RR and LL rotations w.r.t. AVL with example. (3)
- c) Write a program to insert a node at the end of the list. (5)

Q.5.a) Construct expression tree for the following algebraic expression (2)

$$[(a+b)*c]/[(d-h)*(e+f)]$$

- b) Write a note on hashing. (3)
- c) (i) Explain Kruskal's algorithm using example. (5)
- (ii) list the breadth first search of the given graph with explanation (2)



XXXXXXXXXXXXXX

23 9 20 1 92 8 2 22