

# END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE 2016

Paper Code: BCA-108

Subject: Data Structure Using C

Time: 3 Hours

Maximum Marks: 75

Note: Attempt any five questions including Q no.1 which is compulsory.

Q1 Define the following terms:-

(5x5=25)

- (a) Priority Queue
- (b) Linked List
- (c) Binary tree
- (d) Selection sort
- (e) Sparse matrix

Q2 Write a C program to perform PUSH and POP operations on a stack. (12.5)

Q3 (a) Differentiate between linear search and Binary search. (6.5)  
(b) Write an algorithm to convert an infix expression to Post fix expression. (6)

Q4 Write an algorithm to sort a number list using Insertion sort and provide an example to verify the algorithm. (12.5)

Q5 (a) What do you know about B-Tree? Write the steps to create a B-Tree? (7.5)  
(b) The following sequence gives the pre-order and inorder of the Binary Tree T:

Pre Order:	A	B	D	G	C	E	H	I	F
Inorder:	D	G	B	A	H	E	I	C	F

Draw the diagram of the tree.

(5)

Q6 Write a program to search an element using Binary search technique. (12.5)

Q7 (a) Define Queue. In what ways a queue can be implemented? (5)  
(b) Write code for insertion and deletion in a queue. (7.5)

Q8 Write an algorithm for inserting a node in linked list: (12.5)  
(a) At the Beginning  
(b) At the end  
(c) At the specified location

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