(Please write your Exam Roll No.) *Exam Roll No. .....*

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 verity 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 Tre 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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