



UA-3733

Second Year B. C. A. (Sem. III) Examination

March/April – 2012

303 - Advance 'C' & Data Structure

Time : 3 Hours]

[Total Marks : 70

Instruction :

नीचे दशांशविक निशानीवाणी विगतो उत्तरवडी पर अवश्य लभवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
SECOND YEAR B. C. A. (SEM. 3)

Name of the Subject :
303 - ADVANCE 'C' & DATA STRUCTURE

Subject Code No. : **3 7 3 3** Section No. (1, 2,.....) : **NIL**

Seat No. :

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Student's Signature

- 1 Answer the following questions : (any ten) 10
- (1) What do you mean by call by value ? Can we pass array through this method ? If yes, How ?
 - (2) What do you mean by prototype of function ?
 - (3) Define Event-Driven simulation.
 - (4) What are the best, average and worst case complexities of Bubble sort and insertion sort ?
 - (5) How many null branches are there in a binary tree with 20 nodes ?
 - (6) How Array differs from pointer ? Explain it with example.
 - (7) What are the applications of trees ?
 - (8) Explain difference between insertion sort and selection sort.
 - (9) What are the disadvantages of linked list ?
 - (10) Convert the following infix expression into postfix.
 $A+(C-D)/(B*D)$
 - (11) Give example of Static Memory allocation.
- 2 (a) Compare Binary search with sequential search. Write an algorithm to perform binary search on a given array. 8
- (b) What do you mean by Queue ? List out the different types of queue. Write an algorithm to perform insert and delete operation on circular Queue. 7

OR

- 2 (a) Explain pointer to structure. Write a program to declare a structure with the fields Roll No., name, mark1, mark2. Input and output this structure data using pointer to a structure. 8
- (b) Differentiate between internal sorting and external sorting. Write a program to sort a following array using Quick Sort. 7
3, 1, 4, 5, 10, 7, 8
- 3 (a) How a directed tree can be represented graphically in different ways ? Write an algorithm to convert general tree into binary tree. 8
- (b) What do you mean by Linked list ? What are the various applications of linked list ? Write an algorithm to perform the following operations on singly linked list. 7
- (1) Insert at given position.
(2) Delete particular value
(3) Display the list.
- OR**
- 3 (a) What do you mean by Sorting ? Write an algorithm to sort element of given array using Quick Sort. 8
- (b) Explain recursion. Give advantages and disadvantages of it. Write a recursive function that generates first N Fibonacci numbers. 7
- 4 (a) What is linked list ? Write an algorithm to create Doubly linked list. 8
- (b) Define Stack. Write a program to reverse string using stack. 7
- OR**
- 4 (a) Define Deque. Write a program to perform input and output operations on input restricted deque. 8
- (b) Explain with example Tower of Hanoi. 7
- 5 Attempt any three : 15
- (1) Heap Sort
(2) Stack and its applications
(3) Height Balanced Tree
(4) AVL tree.