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Third Semester B.E. Degree Examination, June/July 2011
Data Structure with C

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions.

2. Answer at least One question from Part – A.

PART – A

- 1 a. What are Lvalue and Rvalue? Explain with example. (06 Marks)
- b. What is pointer to an array and array of pointers? Explain with example. (08 Marks)
- c. Explain dangling pointers and memory leakage with example. (06 Marks)
- 2 a. Explain string token function. Write a program to parse a simple algebraic expression SUM = SUM + 10 ; using the delimiters white space and semicolon. (10 Marks)
- b. How structure can be parsed to a function through pointers? Explain with example. (05 Marks)
- c. Explain the functions to access FILE randomly in file handling process. (05 Marks)

PART – B

- 3 a. Write a function to convert a valid infix expression to prefix expression. Demonstrate the same function with example. (12 Marks)
- b. Write a function i) INSERTION ; ii) DELETION with respect to circular queue. (08 Marks)
- 4 a. What is a recursion? Write a recursive function to
 - i) to find GCD of two number.
 - ii) to find factorial of a number.
 - iii) to reverse positive integer number. (12 Marks)
- b. Write a C program to implement a STACK using linked list. (08 Marks)
- 5 a. Write a function
 - i) to reverse the direction of singly linked list.
 - ii) to count number of nodes in a singly linked list.
 - iii) to create ordered linked list. (12 Marks)
- b. Enlist the advantages and disadvantages of DLL over SLL. Doubly Linked List (DLL), Single Linked List (SLL). (08 Marks)
- 6 a. Write a function to insert and delete a node, in Doubly Linked List, with respect to given position. (10 Marks)
- b. What is dynamic memory allocation? Write a function to delete a node from a circular linked list. Proper error message should be displayed. (10 Marks)
- 7 a. What is a TREE? Explain how TREE can be represented using structure. (05 Marks)
- b. Write a function to create binary search TREE. (05 Marks)
- c. Define post order and pre order traversal of Tree. Given the post order and pre order traversal, construct a single binary Tree.
 POST ORDER : J H D E B I F G C A
 IN ORDER : D J H B E A F I C G. (10 Marks)
- 8 Write a short notes on : a. Structure and union ; b. FILE handling ; c. Circular LINKED LIST ; d. BINARY TREE. (20 Marks)