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RN-6171

B. E. - II (Sem. III) (CO/IT) Examination

May / June – 2010

Data Structure & Programming Methodology

Time : Hours] [Total Marks : **100**

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. - 2 (Sem. 3) (CO/IT)**

Name of the Subject :

☛ **Data Structure & Programming Methodology**

☛ Subject Code No. : **6 1 7 1** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

SECTION - I

1 (a) Define following terms : **10**

(i) Data abstraction

(ii) Lower triangular array

(iii) Simulation

(iv) Recursion

(v) Pointer

(b) Explain row-major and column major representation of a two dimensional array and write the formula to find out address of a (i)(j). **10**

2 Write a C program to add, delete, search, display and count the nuber of nodes using linked list. **15**

OR

2 Write a C program to implement stack as a link list. **15**

3 Write short notes on following (any **three**) **15**

(i) Conversion of infix to postfix

(ii) Operation on queues

(iii) Priority queues

(iv) Circular link list

(v) Multiple stack

SECTION - II

4 (a) Define following terms : **10**

(i) In-degree

(ii) Multigraph

(iii) Trie

(iv) Adjacent nodes

(v) Weighted graph

(b) Explain the procedure to delete a node from a binary search tree. **10**

5 Explain the complete procedure to construct a binary expression tree using suitable example. **15**

OR

5 Explain Breadth first search traversal algorithm with suitable example. **15**

6 Write short notes on following (any **three**) **15**

(i) Application of graph

(ii) Linked representation of graph

(iii) Application of trees

(iv) Weight balanced trees

(v) Recursive routine to generate Fibonacci series.
