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KC-6171

B. E. II (Sem. III) (CO/I.T.) Examination

November/December – 2012

Data Structure & Programming Methodology

Time : **3** 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. II (Sem. III) (CO/I.T.)**

Name of the Subject :

☛ **Data Structure & Programming Methodology**

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

Seat No. :

Student's Signature

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

(i) Sparse array

(ii) Algorithm

(iii) Base address

(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 two polynomials using singly link list. **15**

OR

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

3 Write short note on following : (any three) **15**

(i) Multiple stacks

(ii) Dequeue

(iii) Application of Queue

(iv) Circular link list

(v) Multiple stack

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

(i) Out-degree

(ii) Forest

(iii) Cycle

(iv) Binary tree

(v) Weighted graph

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

5 Explain the various tree traversals algorithm with suitable example. **15**

OR

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

6 Write short note on following : (any three) **15**

(i) Spanning trees

(ii) Height balanced trees

(iii) Conversion of general tree to Binary tree

(iv) Weight balanced trees

(v) Recursive routine to generate Fibonacci series