* S E - 8 0 6 7 / 3 0 0 *

SE-8067

B. E. - III (Sem. III) Examination

May / June – 2011

Computer Engineering/Information Technology

Time : Hours] [Total Marks :

Instructions :

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

Name of the Examination :

☛ B. E. - 3 (SEM. 5)

Name of the Subject :

☛ Computer Engineering/Information Technology

☛ Subject Code No. : 8 0 6 7 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

Q-1 [a] Attempt following. 10

1. Compare primitive and non-primitive data types.
2. What is Sparse Matrix?
3. Differentiate Polish and Reverse polish expression.
4. Enlist applications of linked list.
5. Discuss advantages of pointers over arrays.

Q-1 [b] Write a C program to reverse a given string using stack. 10

Q-2 Write a C program to evaluate a postfix expression. 15

OR

Write a C program to illustrate insertion and deletion operations on simple deque. 15

Q-3 Write short note on following. (Attempt any three) 15

1. Tower of Hanoi
2. Representation of arrays
3. Priority queue
4. Applications of stack

Q-4 Attempt any three. 18

1. Discuss various representation of binary tree.
2. Explain conversion of general trees to binary trees with diagrams.
3. Write an algorithm for deleting a node from binary search tree.
4. For the following numbers create binary search tree and traverse preorder and postorder.

100 20 30 40 120 45 50 55 35 66 70 80 90 110 75

Q-5

(a) What is Hashing? Discuss any four hash functions. 6

OR

(a) Explain multi-key file organization and access methods. 6

(b) What is collision in Hashing? Explain collision resolution techniques. 8

OR

(b) Discuss and compare: sequential and indexed sequential file organization. 8

Q-6 Attempt any three. 18

1. Translate the following string into postfix notation and trace the content of stack. (a + b ^ c ^ d) * (e + f / d).
2. Write an algorithm for deleting a node from a specified position from a doubly linked list.
3. Write a short note on linked implementation of stack.
4. Write an algorithm for traversing a graph using breadth first search.