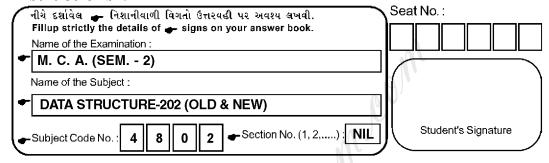**RF-4802**

M. C. A. (Sem. - II) Examination
April / May – 2010
Data Structure - Paper : 202
(Old & New Course)

Time : **3** Hours]   [Total Marks : **70**

Instructions :

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

Name of the Examination :
➞ **M. C. A. (SEM. - 2)**

Name of the Subject :
➞ **DATA STRUCTURE-202 (OLD & NEW)**

➞Subject Code No. : | 4 | 8 | 0 | 2 | ➞Section No. (1, 2,......) : **NIL**

Seat No. :

Student's Signature

1   Write short answers of following questions (any ten)   **20**

(a)   How do you identify overflow for a circular queue?

(b)   Differentiate between loop and circuit.

(c)   Define outdegree of node.

(d)   Why circular queue is required?

(e)   What is dequeue?

(f)   What is the diffrence between bubble sort and quick sort?

(g)   What is linked list? How it is used?

(h)   Convert following infix notation to Prefix notation.

A/B*C–D+E/F/(G+H)

(i)   Define-complete m-ary tree.

(j)   Define - Tree.

(k)   What is a circular linked list? List advantages and disadvantages of it.

(l)   What will be the maximum number of nodes in a binary tree of depth of k?

RF-4802]   1   [Contd...

2   Do as directed (any four)   **20**

     (a)   Explain the bubble technique by sorting following characters in ascending order.

          C O M P U T E R

     (b)   What is lexically ordered binary tree? Explain process of creating such a tree with any example of your choice.

     (c)   Convert following infix notation to postfix and show status of the stack at each step.

          P - (Q*R) /S/T*K - (M/(N+P)-R)

     (d)   The order of Binary tree in Inorder and preorder traversals are as under. Draw the corresponding Binary tree.

          Inorder : DGBAHEICF

          Preorder : ABDGCEHIF

     (e)   Sort the characters in following string using selection sort in ascending order. Show each step.

          S O F T W A R E

3   (a)   Write the short notes : (any two)   **12**

          (i)   Divide and Conquer method

          (ii)   Greedy Method

          (iii)   Threaded Binary tree

     (b)   What is Binary search? Write a c program for it.   **4**

4   Write answers of following questions : (any two)   **14**

     (a)   (i)   Write an algorithm to perform INSERT and DELETE operations on Circularl queue.,

     (b)   (ii)   Write a c program to insert the node into the singly link list for (I) insertion at the front (II) insertion at the end (III) insertion at the Kth position.

     (c)   (iii)   Write a short note on Hashing Functions.

————————