



**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 :**

नीचे दर्शाविए निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="M. C. A. (SEM. - 2)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="DATA STRUCTURE-202 (OLD &amp; NEW)"/>	<input type="text"/>
Subject Code No. : <input type="text" value="4"/> <input type="text" value="8"/> <input type="text" value="0"/> <input type="text" value="2"/>	Section No. (1, 2,.....) : <input type="text" value="NIL"/>
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 difference 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?

- 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 Circular 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.
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