Total No. of Questions :8] *[Total No. of Printed Pages :2*

Roll No .....

MCA-203

M.C.A. II Semester

Examination, November 2018

Data Structure

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) What is stack? Discuss the various operations performed on stack? Also give the applications of stack. 7
   b) Describe the implementation of circular Queue? What operations we can perform on circular queue? How is it different with liner queue? 7

2. a) What are the advantages and disadvantages of the linked implementation of a queue relative to the contiguous implementation. 7
   b) Convert A + (B * C – (D/EAF)*G) infix expression into postfix format showing stack status after every stack in tabular form. 7

3. a) Create a doubly linked list and write a function to traverse it. 7
   b) List out different traversal way of tree and demonstrate any two with example. 7

4. a) Explain Threaded Binary trees with suitable example. 7
   b) Differentiate between complete binary tree and almost complete binary tree with suitable example of each. 7

5. a) Construct a binary tree from the traversal given below: 7
   In order : 1, 10, 11, 12, 13, 14, 15, 17, 18, 21
   Post order: 1, 11, 12, 10, 14, 18, 21, 17, 15, 13
   b) Apply Quick sort algorithm to sort the following data. Justify the steps. 7
   83, 48, 26, 78, 9, 68, 55.

6. a) What is hashing? What are the qualities of a good hash function? Explain any two hash function in detail. 7
   b) Write down binary search algorithm and search '45' from the list: 7
   92, 35, 45, 72, 12, 18, 48, 36, 5

7. a) Explain various Hash Collision resolution techniques with example. 7
   b) What is minimum spanning tree? Explain Kruskal's algorithm for finding minimum spanning tree with example. 7

8. Write short notes: 14
   a) AVL Tree
   b) Graph Traversals
   c) B^+ trees

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248