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

Roll No .....

MEDC - 201

M.E./M.Tech., II Semester

Examination, June 2014

System Programming

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss the various steps in problem solving with digital computer algorithm. 7

   b) Explain different ways of analyzing algorithm. 7

2. a) Explain applications of stack in recursive function with example. 7

   b) What is a data structure and what are the differences between data type, abstract data type and data structure? 7

3. a) Write a 'C' function to find out whether there is an element "a_{ij}" in an m×n matrix "A" of numbers such that "a_{ij}" is the smallest value in the i^{th} row and largest value in the j^{th} column. How many comparisons does your function make? 7

   b) Explain the operation of inserting an element at the front, middle and at the rear in a doubly linked list. 7

4. a) Convert the expression (A+B)/(C–D) into postfix expression and then evaluate it for A=10, B=20, C=15,

   b) What is a circular queue? Write a C program to insert an item in the circular queue. Write another C function for printing elements of queue in reverse order. 7

5. a) Explain the process of finding the maximum and minimum elements of binary search tree. 7

   b) Among merge sort, insertion sort and bubble sort which sorting method is the best in the worst case. Justify your answer with an example and analysis. 7

6. a) What is Hashiy? Explain ideal hashiy with suitable example. 7

   b) Sort the following list of number using quick sort: 46, 25, 35, 49, 10, 92, 83, 32. 7

7. a) Explain the concept of dynamic programming? Discuss its advantages. 7

   b) Discuss briefly the various phases of compilation process? 7

8. Write short notes: 14

   i) Edition

   ii) Assembler

   iii) AVL Tree

   iv) Binary searching

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