Roll No ....

MEDC-201

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

Examination, November 2019

System Programming

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Discuss about fundamental of programming. 7

   b) Explain various steps in problem solving with digital computer algorithm. 7

2. a) Differentiate between the iteration and recursion with example. 7

   b) What is Doubly linked list? Also explain their implementation process with example. 7

3. a) Discuss about stack and its operation such as PUSH/POP. 7

   b) What are the properties of a B-Tree? Write a program to insert a new vertex into a 2-3 tree, assuming that the levels are ordered. 7

4. a) Differentiate between Quick sort and Heap sort. 7

   b) Find out the complexity of insertion sort and bubble sort. 7

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5. a) Explain divide and conquer strategy giving its control abstraction. 7

   b) Draw a Binary tree using given values - 12, 7, 9, 10, 22, 24, 18, 3, 14, 20. 7

6. a) What is Dynamic programming? Explain matrix operations. 7

   b) Sort the following numbers using heap sort. 7
      46, 25, 35, 49, 10, 92, 83, 32.

7. a) Explain the terms of following: 7
      i) Assembler
      ii) Interpreter
      iii) Compiler

   b) Explain about different type of queues. 7

8. Write short note on: 14
   i) Hash search
   ii) AVL tree
   iii) Static and dynamic allocation.

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