LAST MOMENT TUITIONS

Data Structures

JUN 19

Computer Engineering (Semester 3)

Total marks: 80
Total time: 3 Hours

INSTRUCTIONS
(1) Question 1 is compulsory.
*(2) Attempt any **three** from the remaining questions.*
(3) Draw neat diagrams wherever necessary.

1.a. Explain Linear and Non Linear data structures (5 marks)
1.b. Explain Priority Queue with example. (5 marks)
1.c. Write a program in 'C' to implement Quick sort. (10 marks)

2.a. Write a program to implement Circular Linked List. Provide the following operations:
(i) Insert a node

(ii) Delete a node

(iv) Display the list (10 marks)

2.b. Explain Threaded Binary tree in detail (10 marks)

3.a. Explain Huffman Encoding with suitable example (10 marks)
3.b. Write a program in 'C' to check for balanced parenthesis in an expression using stack. (5 marks)

4.a. Write a program in 'C' to check for balanced parenthesis in an expression using stack. (10 marks)
4.b. Explain different cases for deletion of a node in binary search tree. Write function for each case (10 marks)

5.a. Write a program in 'C' to implement Stack using Linked-List.
Perform the following operations:
(i) Push

(i) Pop

(iii) Pop

(iii) Seek

(iii) Display the stack contents (10 marks)

5.b. Explain Depth First search (DFS) Traversal with an example.
Write the recursive function for DFS (10 marks)
Write Short notes on (any two)

6.a Application of Linked-list--Polynomial addition (10 marks)
6.b. Collision Handling techniques (10 marks)
6.c. Expression Tree (10 marks)
6.d. Topological Sorting (10 marks)