II Semester B.Sc./B.A. Examination, May/June 2007
(Semester Scheme)
COMPUTER SCIENCE – II
Data Structures and Operating Systems

Time: 3 Hours Maximum Marks: 60

Instruction: *Answer* ***all*** *Sections.*

SECTION – A

Answer **any ten** questions. **(1×10=10)**

1. What is the maximum value an integer can represent ?
2. Why Big 0 notation used ?
3. Give the difference between an array and a structure.
4. In the following code; Write two different ways of printing the address of n

   int n = 45, * ip;

   ip = & n;
5. What are the advantages of doubly linked list ?
6. Write the average number of comparisons in Binary search.
7. What is Caching ?
8. What is a command interpreter ?
9. What is multi tasking operating system ?
10. Define Thrashing.
11. Give the difference between logical and physical address.
12. What is access time ?

SECTION – B

Answer **any five** questions: **(3×5=15)**

1. Explain the different operations on strings.
2. Write about the different dynamic memory allocation functions.
3. Write an algorithm to delete an element from a Queue.
4. Write a program to delete an element from an array.
5. Describe the purpose of system calls.
6. Explain the importance of Process Control Block.
7. Explain different file allocation methods.

SECTION – C

Answer **any five** questions: **(5×7=35)**

1. a) Mention different types of data structures.
   b) Write a program to create a linked list and display its contents.
2. a) Write an algorithm to convert an infix expression to postfix expression.
   b) Write an algorithm to evaluate a postfix expression.
3. Write a program to create and traverse a Binary Search Tree.
4. a) Write the linked representation of a graph.
   b) Write the Breadth-First search algorithm on a graph.
5. Write a program for insertion sort.
6. Explain different functions of an operating system.
7. Describe different process scheduling algorithm.
8. Explain paging and segmentation memory management schemes.