JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY-2008

I B.TECH SUPPLIMENTARY EXAMINATIONS
C AND DATA STRUCTURES
(B.TECH ALL BRANCH)

 AUG/SEP -2008

TIME-3 HOUR
MARK-80

ANSWER ANY FIVE QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

1. (a) Write a program to convert Fahrenheat to Celsius using the formula: $C = F-32 \; 1.8$

(b) What are the Relational operators used in C and illustrate it with an examples.

2. (a) In what way array is different from an ordinary variable?

(b) What conditions must be satisfied by the entire elements of any given array?

(c) What are subscripts? How are they written? What restrictions apply to the values that can be assigned to subscripts?

(d) What advantage is there in defining an array size in terms of a symbolic constant rather than a fixed integer quantity?

(e) Write a program to find the largest element in an array.

3. (a) Explain the advantages of structure type over the array type variable.

(b) Define a structure that represent a complex number (contains two floating- point members, called real and imaginary). Write a C program to add, subtract, and multiply two complex numbers.

4. (a) Explain the way of defining, opening and closing a file. Also explain the different modes of operation.

(b) Write a C program to read data from the keyboard, write it to a file called INPUT, again read the same data from the INPUT file, and display it on the screen.

5. Declare two queues of varying length in a single array. Write functions to insert and delete elements from these queues.

6. Write a routine to concatenate two doubly linked lists.

7. Write in detail about the following:

(a) Weakly connected graph

(b) strongly connected graph

8. (a) Write a C program to sort the elements of an array using bubble sort technique with a suitable example.

(b) What is the worst case and best case time complexity of bubble sort?