MCA (Revised)

Term-End Examination

December, 2007

MCS-011 : PROBLEM SOLVING AND PROGRAMMING

Time : 3 hours   *Maximum Marks : 100*

(Weightage 75%)

Note :

(i)   *Question number 1 is **compulsory**.*

(ii)   *Attempt any **three** questions from the rest.*

1.   (a)   Design an algorithm, draw a corresponding flow chart and write a 'C' program for Binary Search, to search a given number among the list of numbers.   *10*

     (b)   Write the syntax for the declaration of a function. Also discuss the parameter passing methods with an example program.   *10*

(c) Write a recursive function in 'C' that computes the factorial of a given integer. *10*

(d) List and explain the precedence of Arithmetic, Logical and Relational operators in 'C'. *10*

2. (a) Write an algorithm and draw flowchart to find whether a given string S1 is substring of another string S2. *10*

(b) Write a program in 'C' language which accepts the enrollment number of a student as input and prints the name of that student. The program should initially store information about the (name, enrollment number) pairs of students in the form of a matrix. *10*

3. (a) Write a program in 'C' language to display the names and seat numbers of all passengers of a bus in the form of a singly linked list. Use pointers. *10*

(b) Explain any five functions of <stdlib.h> library. *10*

4. (a) Write a program in 'C' that accepts a sentence 's' and a word 'w' as input. Now, the program should print the starting position of right-most occurrence of 'w' in 's'. *10*

(b) Write a program in 'C' language that accepts the name of a file as input and prints those lines of the file which have the word 'this'. *10*

5. (a) Write a program in 'C' language to convert a decimal number into binary number. *10*

(b) Write a program in 'C' language to add two matrices. *10*