

MCA (Revised)
Term-End Examination
June, 2007

**MCS-011 : PROBLEM SOLVING AND
PROGRAMMING**

Time : 3 hours

Maximum Marks : 100

(Weightage 75%)

Note : Question number 1 is **compulsory**. Attempt any **three** questions from the rest.

1. (a) Design an algorithm, draw a corresponding flow chart and write a program in C, to swap the values using pass by value and pass by reference methods. 10
- (b) Write an algorithm and program in C to print fibonacci series. 10
- (c) Write a program to generate the pattern 10

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

- (d) When can 2 matrices of order $a \times b$ and $c \times d$ be multiplied ? Also write a program in C to find the product of 2 such matrices. 10
2. (a) Explain the concept of a function returning a pointer with an example. 6
- (b) Write a macro to find the sum of n numbers. 7
- (c) Write a program in C, to copy file1 to another file2 in the same directory. 7
3. (a) Draw a flow chart and write a program in C to sort a given list of numbers. 7
- (b) Write a program in C to compare two strings without using String Compare function. 5
- (c) Explain various types of storage classes in C with example for each. 8
4. (a) Explain use of comma operator in C with the help of an example. 5
- (b) What is the difference between & and && ? Explain with an example. 5
- (c) Write a program in C using structures to simulate salary calculation for employees of a company. Assumptions can be made wherever necessary. 10

5. (a) Write a program to count the number of characters and words in a given file. 10
- (b) Write a program to display the string "EARTH" in the following format : 10

```
E
E A
E A R
E A R T
E A R T H
E A R T
E A R
E A
E
```

