

MCA (Revised) / BCA (Revised)

Term-End Examination

04770

December, 2017

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

Time : 3 hours

Maximum Marks : 100

(Weightage : 75%)

Note : Question no. 1 is compulsory. Answer any three questions from the rest.

1. (a) Write an algorithm and draw corresponding flow chart to check whether the given number is prime or not. 10
- (b) Write a program to search an element in a given list of elements using linear search. 10
- (c) Differentiate between a macro and a function. To illustrate, write a macro and a function to swap values of 2 variables x and y. 10
- (d) Write a program to read a file and count the number of lines in the file. 10

Note : Should not use an in-built function.

2. (a) What are Linker errors ? Also explain Logical and Runtime errors. 10
- (b) Using structures, write a C program to calculate the Gross salary and Net salary, if Basic, Grade Pay, TA and DA are given. Deductions like Loans, Tax, LIC, etc. need to be considered, if any. 10
- Note : Assumptions can be made wherever necessary and list them.*
3. (a) Explain For loop and Do loop control statements with an example for each. 10
- (b) Explain any four string functions with an example for each. 10
4. (a) Explain the categories of functions. Also illustrate a "function with arguments and has no return value". 10
- (b) What is Recursion ? Write a program to find the factorial of a number. 10
5. (a) What are Unions ? Give an example code segment to initiate a union and to access a member of a union. 10
- (b) Write a program to test whether the given string is a number palindrome or not. 10