Subject Code—6787

M.C.A. (First Year) EXAMINATION

(Main)

(5 Years Integrated Course)

MCA-102

COMPUTER PROGRAMMING AND PROBLEM SOLVING USING 'C'

Time : 3 Hours   *Maximum Marks : 70*

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) What do you mean by an algorithm ? Enumerate important characteristics of an algorithm.

   (b) What do you understand by Problem Solving ? Discuss various tools helpful in problem solving.

2. (a) What are Operators ? Chart various types of operators offered by C language and illustrate precedence of these operators.

   (b) What are various data types used in C language ? Illustrate their declaration and usage.

3. (a) What is pre-processing ? Explain the role of the C pre-processor.

   (b) What are Variables ? Enumerate the rules followed for naming variables in C language.

4. (a) Write a program in C to convert a decimal number into its octal equivalent.

   (b) What are Functions ? How are these useful in programming ? Explain with suitable examples through C codes.

5. Differentiate between the following :

   (i) for and do while loop

   (ii) static and automatic variables

   (iii) switch and if-else if ladder

   (iv) getche ( ) and getchar ( ).

6. (a) What do you mean by pointer ? Write a program to interchange the values of A and B using pointer.

(b) What do you mean by Recursion ? State its benefits and illustrate their use with the help of suitable example.

7. (a) What are the various advantages offered by user-defined functions ? How does main ( ) function differ from other defined functions ? Illustrate.

(b) Write a program in C that will count all occurrences of a particular input string in the given text.

8. (a) What are Files ? How are these useful in programming ? Explain with C code segments.

(b) Explain various techniques for parameter passing in functions with their relative merits through C codes segments.