Roll No. .....

Subject Code—6745-X

# P.G.D.C.A./M.C.A. EXAMINATION

(First Semester)

(MCA 3 Years)

(Re-appear Batch 2009)

MS-02

## COMPUTER PROGRAMMING FOR PROBLEM SOLVING

*Time :* 3 *Hours* *Maximum Marks :* 70

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

1. What is the importance of algorithms and flow-charts in solving problems ? What characteristics are necessary for a sequence of steps to qualify as an algorithm ? Justify your answer by writing an algorithm to find the sum of the following series :

   1/2! + 3/4! + 5/6! ..... (upto *n* terms)

2. Sketch the structure of a 'C' program for a problem of your choice. Also describe the relationship/distinction between the following :
   (a) Identifiers, keywords and data types
   (b) Conditional, bit-wise and logical operators.

3. (a) Give a suitable example to show the usage of a two dimensional array in 'C'.
   (b) Write a 'C' program to show how pointers can be used.

4. Give a distinction between While and Do-while loops with suitable examples. What is the effect of Break and Continue Statements in for, while and do-while loops ?

5. Describe the following in brief :
   (a) Recursion
   (b) External and Static Variables
   (c) Array of Pointers.

6. What is the advantage of using functions ? Describe the following in the context of functions using a suitable example.
   (a) Local and Global Variables
   (b) Arguments
   (c) Call by value and call by reference.

7. Describe the usage of the following string functions with examples :

(a) Strcpy

(b) Strcat

(c) Strlen

(d) Strcmp

(e) Sprintf.

8. When is a data file preferred over arrays and other structures for storage of data ? Explain the following in the context of files :

(a) Getc and putc

(b) Fopen and fclose

(c) Putchar and getchar

(d) Fseek and ftell

(e) Stdin and stdout.