

MCA/D07

Computer Fundamentals and Problem Solving using C

MCA -101

Time : 3 Hours

MM:50

Note:- Attempt Five questions in all, Selecting at least one question from each unit. All Question carry equal marks.

UNIT-I

- 1(a) What are the basic components and functions of a computer system?
- (b) Why is computer important to modern society?
- 2 Define the term Compiler, interpreter, Assembler, loader and linker. Also explain the various states of a program in a computer system.
- 3 What do you mean by Problem-solving? Explain various problem-solving techniques with the help of suitable examples.
- 4 Draw flow chart for the following:
 - (a) Bubble sort
 - (b) Binary search

UNIT-II

- 5(a) Why we need data types? Explain various data types available in C with examples.
- (b) Differentiate between Inary, Binary and Ternary operations.
- 6 Differentiate between the following:
 - (c) getchar(), getche () and getch ()
 - (d) gets () and puts ()
 - (e) putchar () and putch ()
 - (f) scabf () and printf ()
 - (g) break and continue
- 7 Explain and discuss various decision-making statements available in C. Write also a program in C generate the following pyramid:

```

      1
    2 3 2
  3 4 5 4 3
4 5 6 7 6 5 4
5 6 7 8 9 8 7 6 5
6 7 8 9 0 1 0 9 8 7 6

```

UNIT-III

- 8 What do you mean by Array? Why are they needed? Which operations we perform on Arrays? Explain. Write a program in c to generate first 100 numbers/terms of a Fibonacci sequence using arrays.
- 9 Why are functions needed? Write a program in C to sort a given sequence of N numbers using a function concept in asending order.
- 10 Write short notes on the following:
- (a) Importance of Pointers in C.
 - (b) String functions
 - (c) Data files.