

C PROGRAMMING AND DATA STRUCTURES - BAP-201

Time Allowed : Three Hours]

Note : Attempt *five* questions in all, selecting at least *two* questions from each Section A and B. Section C is compulsory. Use of Non-programmable scientific calculator is allowed. [Maximum Marks : 60

Section - A

1. What are the various data types available in C? Give the memory requirement of each data types. 12
2. What are the data type manipulators? Explain. 12
3. What do you mean by iterative control structures? Elaborate each with the help of suitable examples. 12
4. What do you mean by recursion? What are its advantages and disadvantages? Write a recursive function to print the factorial of a given number. 12
5. What is a Pointer? What are advantages and disadvantages of pointers? How can we display the address of a variable? Differentiate between indirection operator and dereferencing operator. 12

Section - B

5. What do you mean by data structures? What is the use of data structure? Discuss various mathematical notations and functions required to discuss data structures. Discuss in brief the concept of algorithmic complexity. 12
6. What do you mean by an array? What do you mean by linear array? How a linear array is stored in memory? What do you mean by traversing linear array? 12
7. What do you mean by a queue data structure? How a queue data structure is different from stack data structure? Discuss the process of insertion and deletion in a queue. 12
8. What do you mean by sorting? What are various sorting techniques? Discuss any one in detail. 12

Section - C

9. Explain brief notes on the following :
 - (a) What do you mean by reserve words and user defined words? 2
 - (b) Differentiate among getch(), gethar() and getche(). 2
 - (c) What do you mean by union? How it is different from structure? 2
 - (d) Different between linear and non-linear data structures. 2
 - (e) What is sparse array? 2
 - (f) How a linear search is different from binary search? 2