MBF-003-003201 Seat No. _____

B. C. A. (Sem. II) (CBCS) Examination

March / April - 2018

CS - 07 : Advance C & Data Structure

(Old Course)

Faculty Code : 003
Subject Code : 003201

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

1   Answer the following :   **20**

   1.   Define data structure.

   2.   Queue follows _____ method.

   3.   Which data structure can't store the non-homogeneous data elements ?

   4.   _____ is non-linear data structure.

   5.   Which symbol is used to store memory address of another variable ?

   6.   The operation of processing each element in the list is known as _____.

   7.   The situation when in a linked list START=NULL is _____.

   8.   Each node in singly linked list has _____ fields.

   9.   Value of first linked list index is _____.

   10. Doubly linked list provides list traversal in _____ direction.

   11. The operation for deleting an element to a stack is called _____ operations.

   12. Deletion operation is done using _____ in a queue.

   13. Which algorithm design technique is used in the quick sort ?

   14. Which sorting technique is very fast ?

15. Which function is used to de-allocate the memory ?

16. Binary search algorithm cannotapplied to _____.

17. Which function is used to move the cursor at the beginning of the file ?

18. What is header linked list ?

19. In a tree data structure, the connecting link between any two nodes is called as _____.

20. Which searching method always works on ascending data ?

2 (A) Attempt any three :   6
   1. Give difference between Static array and Dynamic array.
   2. Explain Advantage of using pointer.
   3. Define Command Line Argument.
   4. Define Text File and Binary File.
   5. What is Void Data type ?
   6. What is linked list ?

   (B) Attempt any three :   9
   1. Explain call by value & call by reference.
   2. Explain Structure as a function argument with example.
   3. Explain FILE structure and file opening modes.
   4. Explain pointer to structure with example.
   5. Explain fscanf( ), fread( ), fgets( ) function with its syntax.
   6. Write a program that implements insert operation of circular queue.

   (C) Attempt any two :   10
   1. Explain Primitive and Non-primitive Data Structure types.
   2. Explain Recursion with suitable example.
   3. Explain circular queue with example.
   4. Write a program of stack.
   5. Explain File handling functions.

3 (A) Attempt any three : **6**

    1.   Explain calloc( ) with example.

    2.   Explain fputs( ) with example.

    3.   Write insertion sort algorithm.

    4.   Write an algorithm that delete last node in doubly linked list.

    5.   Define root node and leaf node.

    6.   Explain properties of tree.

(B) Attempt any three : **9**

    1.   Write a program of selection sort.

    2.   Explain Bubble sorting technique with example.

    3.   Give difference stack and queue.

    4.   Explain array of structure.

    5.   Write a algorithm step of Quick sort.

    6.   Explain push and pop operations of stack.

(C) Attempt any two : **10**

    1.   Write a program to perform tree with insert( ), inorder( ), preorder( ), and postorder( ).

    2.   Write a program of queue.

    3.   Write a Linear Search algorithm.

    4.   Explain Merge Sort algorithm.

    5.   Write a program that performs the following operation for singly linked list :

        Create, Display, Insert First, Delete Last, Sort.

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