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MBF-003-1042001 Seat No. _____

B. Sc. (IT) (Sem. II) (CBCS) Examination

March / April - 2018

CS - 07 : Data Structure using C Language

Faculty Code : 003

Subject Code : 1042001

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

1 (A) Answer in one sentences : **4**

(1) _____ is the name of the & operator.

(2) Function call it self that is known as _____

(3) _____ keyword is use to declare structure.

(4) _____ datatype occupied two bytes.

(B) Answer in two or three sentences : (Any **One**) **2**

(1) Explain malloc( ), calloc( )

(2) What is analysis of algorithm ?

(C) Write down the answer of following questions : (Any **One**) **3**

(1) Explain array of pointer with example.

(2) Short Note On: Time complexity and Space complexity.

(D) Write down the answer of following questions in detail : (Any **One**) **5**

(1) What is structure ? Explain with example.

(2) Create structure stud (rollno, name, mono) input 5 records and print.

2 (A) Answer in one sentences : **4**

(1) The process of arranging the data or information in some logical order is known as _____

(2) Array is _____ type of data structure.

(3) Quick sort uses _____ for implementation.

(4) There are mainly _____ techniques available in sorting.

(B) Answer in two or three sentences : (Any **One**) **2**

(1) Explain index searching.

(2) What is graph ?

(C) Write down the answer of following questions : (Any **One**) **3**

(1) Compare insertion sort and selection sort.

(2) Explain complete graph.

(D) Write down the answer of following questions in detail : (Any **One**) **5**

(1) Explain travse method of graph (DFS, BFS)

(2) Write a program to sort an array element using Quick sort technique.

3 (A) Answer in one sentences : **4**

(1) Give the full form of LIFO.

(2) _____ is support FIFO method.

(3) _____ is support LIFO method.

(4) Give the full form of TOS.

(B) Answer in two or three sentences : (Any **One**) **2**

(1) Explain postfix and prefix expression.

(2) Explain linear data structure.

(C) Write down the answer of following questions : (Any **One**) **3**

(1) Write a menu driven program to implement a static stack with following operation.

Push( ), pop( ), dispay( ).

(2) What is data structure ? Explain primitive and non primitive.

(D) Write down the answer of following questions in detail : (Any **One**) **5**

(1) Write a menu driven program to implement a dynamic queue.

(2) What is circular queue ? Explain in detail with example.

4 (A) Answer in one sentences. : **4**

(1) List out types of linked list.

(2) What is node ?

(3) Each node in singly linked list has _____ fields.

(4) _____ part contains the data values.

(B) Answer in two or three sentences : (Any **One**) **2**

(1) What is linked list ?

(2) List out operation of linked list. Explain any one.

(C) Write down the answer of following questions : (Any **One**) **3**

(1) Difference between singly linked list V/s. doubly linked list.

(2) Explain circular link list with suitable example.

(D) Write down the answer of following questions in detail : (Any **One**) **5**

(1) Write an algorithm for following operation on singly linked list.

(1) Append

(2) Insert first

(3) Delete

(4) Count

(2) Explain application of linked list.

5 (A) Answer in one sentences : **4**

(1) A _____ node has no children.

(2) In tree construction _____ is the suitable efficient data structure.

(3) Pre-order traversal sequence is _____

(4) There are mainly _____ techniques used to maintain binary tree.

(B) Answer in two or three sentences : (Any **One**) **2**

(1) Define root node, leaf node.

(2) Difference between Binary tree V/s. Binary search tree.

(C) Write down the answer of following questions : (Any **One**) **3**

(1) Explain B-tree with example.

(2) Write Note On Binary Tree.

(D) Write down the answer of following questions in detail : (Any **One**) **5**

(1) Explain traversal methods of binary tree.

(2) Write a program for BST and performs Insertion and traversal operation.