

2011*Time : 3 hours**Full Marks : 80*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions in which*

Q. No. 1 is compulsory.

1. Indicate the correct answer of the following :

(a) How many operations related to the array ?

(i) 3

(ii) 7

(iii) 5

(iv) 8

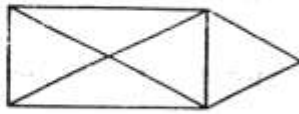
(b) What concept used with array for Memory Representation ?

(i) Pointer

(ii) Polynomials

- (iii) Link List
 - (iv) Union
- (c) Finite set of elements that can be partitioned into 3 distinct sub-sets called the root, left and right sub-tree that is :
- ☒ (i) Binary Tree
 - (ii) AVL Tree
 - (iii) Search Tree
 - (iv) All of these
- (d) Arranging the set of data in the same order, called :
- (i) Stack
 - (ii) Search
 - ☒ (iii) Sort
 - (iv) Queue
- (e) How many Null branches are there in a binary tree with 20 Nodes ?
- (i) 6
 - ☒ (ii) 10
 - (iii) 21
 - (iv) None of these

- (f) How many Vertices and Edges matches with given graph :



- (i) $V = 5, E = 8$
 - (ii) $V = 6, E = 9$
- (g) Minimum number of queues needed to the implement the priority queue ?
- (i) One
 - (ii) Three
 - (iii) Two
 - (iv) Four
- (h) "Algorithms" made by two words, "Algo + rithm", what is the meaning of "rithm" ?
- (i) Ratio
 - (ii) Priority
 - (iii) Complexity
 - (iv) Analysing

2. What is polish notation in Stack ? Explain with one 'C' program ?

3. Explain the process of Recursion with the use of Recursion in 'C' programming ? Write a program of Recursion in 'C' ?
4. (a) What is Sequential Representation in Queue ? Explain with the use of array program in Queue.
(b) Write a C++ program in Link List ?
5. Write the "Huffman Algorithm" with illustration of complete binary tree.
6. What is Selection Sort ? Explain with one C++ program.
7. What is Flow problem in graph ? How may be link representation possible in graph with one C++ program ?
8. (a) Explain the concept of linear search with one program ?
(b) What is DMM ? Explain with one example.

