

S.Y.B.SC. (COMPUTER SCIENCE) SEM -IV (2014 COURSE) :
SUMMER - 2018
SUBJECT : DATA STRUCTURES USING C ++

Day : **Wednesday**
Date : **11/04/2018**

Time : **03.00 PM TO 05.00 PM**
Max. Marks : **40**

S-2018-0849

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

Q.1 Attempt **ANY TWO** of the following: **[10]**

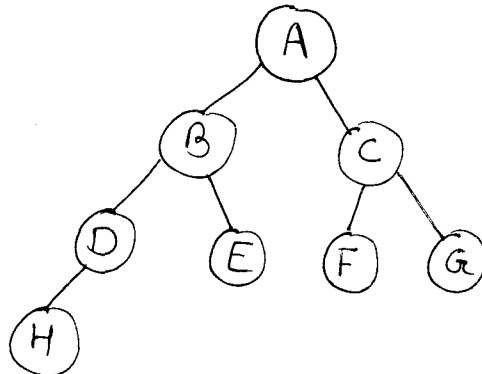
- a) Write a C++ program to implement insertion sort technique.
- b) Explain representation of array in memory.
- c) Write a C++ program to create and display singly linked list.

Q.2 Attempt **ANY TWO** of the following: **[10]**

- a) Differentiate between BFS and DFS.
- b) Explain the concept of height balanced tree with an appropriate example.
- c) Write a C++ program to implement binary search algorithm.

Q.3 Attempt **ANY TWO** of the following: **[10]**

- a) Find inorder, preorder and postorder traversal for the given tree -



- b) Write a C++ program to perform push () and pop () operations on stack.
- c) Explain : i) dequeue ii) circular queue.

Q.4 Attempt **ANY FIVE** of the following: **[10]**

- a) Define Array as ADT.
- b) What is binary search tree?
- c) How to convert infix expression to prefix notation?
- d) State applications of queue.
- e) Define node structure of a doubly linked list.
- f) Define : Indegree and Outdegree of a vertex.
- g) What is spanning tree?

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