Data Struc. using c++_sem 2 - Exam_Jun 19

P131/CMP505/EE/201905

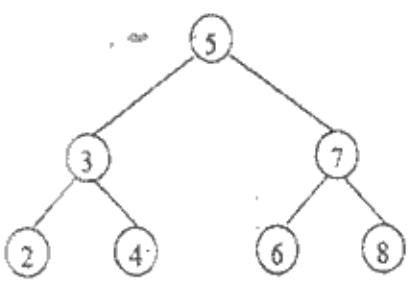
Time : 3 Hours **Marks : 80**

Instructions :

1. All Questions are Compulsory.
2. Each Sub-question carry 5 marks.
3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
4. Question paper of 80 Marks, it will be converted in to your programme structure marks.

1. Solve any **four** sub-questions.
   a) What is Data structure and explain the classification of Data Structure? 5
   b) Explain the concept of 'Binary Search' with algorithm. 5
   c) Explain "Circular Linked lits" with diagram. 5
   d) Convert the following statement infix to postfix: A * (B + C* D) + E. 5
   e) What is an array? How to declare and 2D array in C++? 5

2. Solve any **four** sub-questions.
   a) Explain different types of Asymptotic Notations in detail. 5
   b) What is Queue? Also explain representation of a queue as an array. 5
   c) Discuss the following terms with reference to stack: 5
      i) PUSH ii) POP
      iii) TOP iv) IsEmpty
      v) IsFull
   d) Find the preorder, inorder and postorder sequence of the following BST. 5



   e) What is linked list? Also explain types of linked list? 5

3. Solve any **four** sub-questions.

a) Explain complexity of an algorithm: 5

i) Time Complexity

ii) Space Complexity

b) Explain the concept of 'Selection Sort' along with algorithm. 5

c) Explain the comparison between 'Linked List' and 'Array'. 5

d) Convert the following statement infix to prefix: 5

A $ B * C – D+ E/F/(G + H)

e) Explain what is the Objects and a class. 5

4. Solve any **four** sub-questions.

a) Explain the concept of general tree and also define the following terms: 5

parent, child, siblings, ancestor, descendant.

b) Explain traversal of binary tree with example. 5

c) What is Graph? 5

d) Suppose the following sequence list the nodes of a binary tree T in inorder and postorder. 5

Inorder : 2 6 7 1 4 8 3 5 9

Postorder: 7 6 2 8 4 9 5 3 1

Draw the binary tree.

e) Explain 'hashing' using diagrams. 5

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