Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 18

PGDCA (2019 Batch) (Sem.–2)

DATA STRUCTURE

Subject Code : PGCA-1913

Paper ID : 77842

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

Write briefly :

1. What is the Degree of a Graph?
2. What is a weighted graph?
3. What is the Binary tree?
4. What is difference between LIFO and FIFO structure?
5. Is there a header node in a link list?
6. What is a forest?
7. What is the height of a tree?
8. What is an algorithm?
9. What are the operations possible on a tree?
10. How a tree is represented using link list?

SECTION-B

11. Show how to implement a Queue efficiently by using a link list as a data structure?

12. What are the various application of link list? How is it different from array as a data structure? Explain with examples.

13. What are the various binary tree traversal techniques? Discuss with algorithms.

14. What are the various operations possible on stacks? Explain.

SECTION-C

15. Explain the following with example :

    a) Finite and infinite graph

    b) Directed Graph

    c) Null Graph

16. Suppose a sequence of numbers is given like: 5, 10, 12, 18, 56, 68, 52, 85, 95

    a) What are the various steps in which the number 85 will be found by the Binary search?

    b) In how many steps the number 85 will be found in the linear search?

    c) In How many steps it will be found in the binary search that the number 64 does not exist in this array in the array?

17. Suppose a sequence of numbers is given like: 15, 11, 16, 17, 29, 22, 10, 25, 45, 34 How this numbers will be sorted using : Selection Sorting?

18. Suppose a binary tree T is in the memory. Write a recursive algorithm which find the number of nodes in T and which finds the depth of T?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.