UG/4th Sem/COMP./19 (Pr.)

2019

B.Sc.

4th Semester Examination

COMPUTER SCIENCE (Honours)

Paper - C8P

(Design & Analysis of Algorithms Lab)

[Practical]

Set - II

Full Marks : 20 Time : 3 Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
Illustrate the answers wherever necessary.

Answer any *one* question (on lottery basis). 1×15=15

1. Sort a given set of elements using the quick sort method and determine the time required to sort the elements. 15

2. Write a porogram to implement breadth first search in a graph. 15

3. Write a program to determine the minimum spanning tree of a graph. 15

4. Write a program to sort a given set of numbers using heap sort teachnique. Your program should report the total number of comparisons used by the program to sort those elements. 15

5. Write a program to check whether a given graph is connected or not using depth first search method. 15

6. Write a program to find the longest common subsequence (LCS) of two given sequences. 15

7. Write a program to search an element in a sorted array using binary search technique. 15

8. Write a program to sort a given set of numbers using insertion sort algorithm. 15

9. Find the subsets of a given set $S = \{S_1, S_2, ..., S_n\}$ of n positive integers whose sum is equal to a given positive integer d. For example, if $S = \{1, 2, 5, 6, 8\}$ and $d = 9$ there are two solutions $\{1, 2, 6\}$ and $\{1, 8\}$. A suitable message is to be displayed if the given problem instance doesn't have a solution. 15

10. Write a program to implement N Queen's problem using back tracking. 15

Practical Note Book : 02

Viva-voce : 03
